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NATURAL GAS DEREGULATION

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ORIGINAL

HEARING

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL TRADE, FINANCE, AND SECURITY ECONOMICS

OF THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES
NINETY-SEVENTH CONGRESS
SECOND SESSION

FEBRUARY 18, 1982

Printed for the use of the Joint Economic Committee

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U.S. GOVERNMENT PRINTING OFFICE
96-833 O WASHINGTON : 1982

I

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II

CONTENTS

WITNESSES AND STATEMENTS

THURSDAY, FEBRUARY 18, 1982

Page
Richmond, Hon. Frederick W., member of the Subcommittee on International Trade, Finance, and Security Economics, presiding: Opening statement 1
Butler, Hon. C. M., III, Chairman, Federal Energy Regulatory Commission, accompanied by Robert C. Means, Director, Office of Regulatory Analysis, and Charles Moore, General Counsel 4
Gooch, R. Gordon, attorney, Baker & Botts, Washington, D.C 27
Steimel, Edward J., president, Louisiana Association of Business & Industry 55
Wilson, David W., president, Association for Equal Access to Natural Gas Markets and Supplies 73
Palmer, Christopher N., director of energy and environment, National Audubon Society 97
Lawrence, George H., president, American Gas Association, Washington, D.C 128
Cooper, Mark, director of research, Consumer Energy Council of America, Washington, D.C 171
Taliaferro, Henry B., Jr., executive vice president, the GHK Companies, Oklahoma City, Okla 279
Buckley, John G., cochairman, Northeast Coalition for Energy Equity, Washington, D.C 431

SUBMISSIONS FOR THE RECORD

THURSDAY, FEBRUARY 18, 1982

Buckley, John G.: Prepared statement 434
Butler, Hon. C. M., III, et al.: Prepared statement 9
Chemical Manufacturers Association: Statement of 447
Cooper, Mark:
  Prepared statement 175
  Studies entitled:
    "Natural Gas Price Deregulation: A Case of Trickle Up Economics" 186
    "The Past as Prologue I—The Underestimation of Price Increases in the Decontrol Debate: A Comparison of Oil and Natural Gas" 216
Gooch, R. Gordon: Prepared statement 31
Lawrence, George H.: Prepared statement, together with an attachment 131
Long, Hon. Gillis W.: Opening statement 3
Natural Gas Supply Association: Statement of, together with an appendix ..
Palmer, Christopher N.: Prepared statement 99
Process Gas Consumer Group (PGC): Letter and statement of 312
Steimel, Edward J.: Prepared statement 60
Taliaferro, Henry B., Jr.: Prepared statement 285
Wilson, David W.: Prepared statement 76

NATURAL GAS DEREGULATION

THURSDAY, FEBRUARY 18, 1982

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON INTERNATIONAL TRADE,
FINANCE, AND SECURITY ECONOMICS
OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 2 p.m., in room 2128, Rayburn House Office Building, Hon. Frederick W. Richmond (member of the subcommittee) presiding.

Present: Representative Richmond.

Also present: James K. Galbraith, executive director; Louis C. Krauthoff II, assistant director; and Chris Frenze, Kent H. Hughes, and Keith B. Keener, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE RICHMOND, PRESIDING

Representative RICHMOND. Good afternoon, ladies and gentlemen.

This is a hearing of the Joint Economic Committee, Subcommittee on International Trade, Finance, and Security Economics, on natural gas deregulation.

This hearing is being held to consider the economic implications of national policy with respect to natural gas.

In 1978, after a long and painful debate, the Congress passed the Natural Gas Policy Act. We call it the NGPA. The NGPA provided producers with price incentives to explore and produce additional supplies of natural gas. At the same time, the NGPA sought to provide consumers with reasonably priced gas service. In sum, the NGPA struck a delicate balance between competing and diverse interests.

The Joint Economic Committee is charged with the responsibility of monitoring the economic impacts of a wide variety of national policies. Today's hearing would be timely simply based on the fact that natural gas prices have increased almost 30 percent a year for each of the last 3 years. However, what makes today's hearing particularly important is that it comes at a time when Congress is considering proposals which would raise natural gas prices by drastically altering the delicate natural gas compromise worked out in 1978.

The stakes are billions of dollars in revenues for industry and hundreds of dollars in fuel bills for individual homeowners. The effects of decontrol or accelerated decontrol would be staggering, since natural gas is the Nation's biggest energy source and is also widely used as raw material for such products as plastics and fertilizer.

I trust that this hearing will contribute to the debate by raising questions about the economic impacts of our present gas pricing policy, as well as what would happen under the suggested alternatives.

Proponents of decontrol have focused their attention on the market distorations they claim the NGPA has created. They argue that Congress must raise natural gas prices to market clearing levels to insure that all pipelines can successfully bid for new gas supplies.

No one denies that some distortions have occurred. The natural gas market has experienced distortions for many years. It was distorted before the NGPA because of the decontrolled prices allowed in the intrastate market at a time when the interstate market remained under price controls. And it will probably continue to experience some distortions as we move toward partial decontrol in 1985.

The proper questions for this subcommittee, however, are:

How great have the distortions been?

Will accelerated decontrol actually remedy the problems?

Finally, assuming accelerated decontrol is a solution, does it come at too high a price?

Accelerated decontrol would mean a dramatic increase in the gas bills of the average residential consumer. The American Gas Association states that the average home heating bill could more than double in less than 2 years as gas bills rise by $60 billion a year. For consumers who have already experienced a 30-percent increase during each of the last 3 years, this would be a particularly bitter pill to swallow. They simply cannot afford to pay the additional $500 a year decontrol would cost them.

In my own congressional district, in 1985, the average worker whose home is gas dependent will have to spend 4 weeks' wages just to pay his or her gas bill, not including transportation and distribution charges, if gas prices are immediately decontrolled. This compares with 1 week's wages spent for gas if controls are in place in 1985.

For a customer of Brooklyn Union Gas Co., the gas company in my district, the cost of heating a one-family house has risen from $468 per year in 1978 to $737 a year in 1981.

My constituents are especially affected by price rises because such a large proportion are on fixed incomes, and with these drastic changes in gas prices, there is no tradeoff for them, because gas is not a luxury item.

I have serious concerns that accelerated decontrol would not stimulate more jobs or create an increase in the gross national product. For instance, according to the Citizen Labor Energy Coalition, 860,000 jobs will be lost as a direct result of reductions in consumer purchasing power. That study shows that over the next 4 years, 3.4 million person-years of employment would be lost under accelerated decontrol. The impact of this loss in the economy would be severe. Furthermore, it would have a dire effect on the Federal budget and on capital markets.

President Reagan pointed out in his State of the Union address that for every 1-percent increase in the rate of unemployment, the Federal deficit increases by $25 billion.

Can we really afford decontrol? Is the market distortion problem that serious?

To help us address these issues and provide some answers to these questions, we have invited a number of respected spokesmen representing a range of interests within this key industry. We will be hearing the views of those who drill for the gas, those responsible for delivering it to homes and businesses, and those who speak for the ultimate users.

To lead off our distinguished list of witnesses, we will hear from the Chairman of the Federal Energy Regulatory Commission, Mr. Charles M. Butler.

The FERC is the Federal agency which implements the provisions of the Natural Gas Policy Act, and thus is in an excellent position to evaluate the operation of this act.

One word of appreciation before we proceed. I would like to thank the chairman of the subcommittee, my great and good friend and colleague, Congressman Gillis Long, for suggesting the topic for this hearing and for inviting me to chair today's session. As he well knows, this issue is of extreme interest to the people of New York, as well as to the citizens of Louisiana, and I am very grateful for his generous invitation. Congressman Long has provided an opening statement which I will submit for the record at this point.

[The opening statement of Hon. Gillis W. Long follows:]

OPENING STATEMENT OF REPRESENTATIVE LONG

I want to welcome all of you to this hearing on the economic impact of natural gas policy. Let me, first of all, thank my friend and colleague, Fred Richmond, for chairing this hearing. Over the past year, Fred has taken on a number of assignments in my subcommittee, and has demonstrated an ability to be thoughtful and even-handed in dealing with even the most delicate national issues.

There are several reasons why I felt it appropriate to open a discussion of natural gas policy in an economic rather than an energy setting. The substantial uncertainty which exists in our economy today has led more and more people to look closely at the internal workings of the marketplace—how it works, and why it does or does not work efficiently. Moreover, the Administration just elected by the American public has perhaps one of the strongest commitments to a free-market economy that this country has seen. While signals have been mixed as to the willingness of the Administration to press forward with legislation, there is ample evidence that gas deregulation remains a high priority of the Administration and that some form of action may be imminent.

Some cautionary notes might be helpful at the outset of this discussion. First, change in and of itself does not necessarily insure good policy. We must make certain that the consequences of our action—or inaction—do not create as many problems as they solve. Second, past behavior would suggest that most government attempts at regulating cost and supply of energy, regardless of its form, create unanticipated and often undesirable consequences. Third, it is critically important that any revisions made in energy policy should build toward a stable marketplace that buffers any excessive shocks to the American pocketbook. Wide swings in the cost of a key energy supply, such as natural gas, can inflict severe pain both on consumers and on the building blocks of our industrial and agricultural infrastructure.

In previous hearings held by the energy committee, there has been virtually unanimous agreement that the 1978 Natural Gas Policy Act of 1978 was flawed. From there, the agreement among the various participants in the gas policy debate quickly dissipated. Rarely have there been so many competing and seemingly irreconcilable concerns. Region is pitted against region. Pipeline against pipeline. Producer against producer. Supplier against consumer. Industries fear that gas curtailments will shut down plants and eliminate jobs; consumers worry about the increase in fuel costs; environmentalists are concerned about the commitment to cleaning up pollution; farmers are worried about the high cost of fertilizer, pesticides and shortages of on-farm gas to dry and process crops; and the gas industry is concerned about the possibility of windfall profits taxes. It's no wonder our Nation's policymakers are reluctant to rush into any major changes or radical shifts in policy.

On the other hand, conditions are not static in the area of natural gas policy. We already have in place a natural gas decontrol bill—the Natural Gas Policy

Act of 1978—which is deregulating gas prices on a systematic basis over a fixed period of time. The NGPA culminated 40 years of debate over regulation of natural gas. It extended federal price controls over gas sold within producing states for the first time. It put most natural gas found after April 1977 on a phased decontrol schedule. It set up priorities for handling gas shortages, and established an "incremental pricing" system to protect residential gas consumers from high prices. Under the NGPA, between 50 and 60 percent of all flowing gas will remain under price controls after the target date of 1985. Some further deregulation will occur in July 1987; however EIA estimates approximately 20 percent of all natural gas will still be under control by the 1990's. The bulk of this gas will be in interstate markets.

We have had three years of experience with the Natural Gas Policy Act. Many changes have taken place since 1978. The political realities of that time demanded that some action be taken to shift gas supplies to areas of critical shortages which were occurring in the interstate market. Our strategy was based on the premise that the best way to serve the public was to keep the lid on costs, to buffer the shock of higher prices on people while we put the country on a price path to greater production. The legislative response was framed around the question of how much gas would be produced under the NGPA. The price ceilings were equivalent to distillate fuel prices—viewed at that time as reaching $15 a barrel by the time the Act expired in 1985.

This was not the case. The price of oil more than doubled within a year of enactment. The pricing relationships which had been envisioned in the NGPA were rendered obsolete. It is this gap between the price of oil and the price of gas which reopens the question of well-head pricing today. Our hope in conducting these hearings is to take another look at the condition of the natural gas markets as they have developed during the past few years. I am pleased that we have so many willing and knowledgeable witnesses appear before the subcommittee. And I am particularly pleased that we have an opportunity to examine some new elements of the gas policy debate—the issue of equal and competitive access to natural gas supplies, and the prospect of new administrative initiatives which may alter the current pricing structure without the benefit of legislation.

Representative RICHMOND. Mr. Butler, welcome. Your prepared statement as submitted will be entered into the record.

STATEMENT OF HON. C. M. BUTLER III, CHAIRMAN, FEDERAL ENERGY REGULATORY COMMISSION, ACCOMPANIED BY ROBERT C. MEANS, DIRECTOR, OFFICE OF REGULATORY ANALYSIS; AND CHARLES MOORE, GENERAL COUNSEL

Mr. BUTLER. Thank you very much, Congressman Richmond.

Representative RICHMOND. And Mr. Butler, if you would like to talk off the cuff for 10 minutes, we would be delighted to hear from you, and then we will ask you some questions.

Mr. BUTLER. That is what I would like to do.

Congressman, I would first like to express my appreciation to the subcommittee for inviting me to testify before it today.

As you suggest, what I would like to do is have my prepared statement included in the record, and rather than dwelling on what I have said in paper, which you have already had an opportunity to see, I would like to highlight, if I can, what I think the issues are in this debate.

Representative RICHMOND. Without objection.

Mr. BUTLER. First, I think that it would be worthwhile at the outset to clarify, if we can, what this debate is all about. The debate is frequently characterized as one that is either between decontrol or no decontrol, or between accelerated decontrol and something else unspecified.

In my view, the debate is one that focuses not on whether we will have decontrol, because we are already scheduled to have decontrol. The Natural Gas Policy Act provides for decontrol. It provides, we think, for a perverse kind of decontrol, and that is the source of our problem.

When the term “accelerated decontrol is used” it typically is thought of as meaning decontrol tomorrow. That is not what the accelerated decontrol is that I think of. When I think of decontrol, what I think of is total decontrol as opposed to partial decontrol phased in over a period of time. The recommendation that has been made is that it be phased in between now and 1985 or 1986.

The second point that I think needs to be made in clarifying the debate is that, so far as we can tell, there is no difference ultimately in price to the consumer whether we have partial decontrol or total decontrol.

We believe that under phased total decontrol we get rid of some economic distortions, but the price is no different. As a matter of fact, a case can be made, and has been made, that the price might very well be higher ultimately to consumers under the partial deregulation provided for in the Natural Gas Policy Act. That comes about as a result of the interplay between the anticipated price spike, about which I will speak more in a few minutes, and the indefinite pricing provisions that are typically found in producer gas supply contracts.

If we make the assumption that the price ultimately to the consumer is going to be the same under either partial or phased-in total decontrol, the question is, should we revisit upon ourselves that bloodbath that I am sure you well remember from 1977, 1978? And I think the answer to that question is yes, it does focus on this problem of market disorder about which the Department of Energy has written somewhat extensively.

The commission, my commission, now has before it several proposed rulemakings. What we are in the process of doing through those rulemakings and solicitations of comments in those rulemakings is to try to get perhaps a little bit better handle on the depth and nature of the market disorder that is anticipated, and that indeed we think is occurring right now.

Here are the characteristics of disordered gas markets that we see under the Natural Gas Policy Act.

First, the price spike. Prices were established in the Natural Gas Policy Act on an assumption that oil prices in 1985 would be about $15 a barrel. History has overtaken that assumption, and it is now clear that the assumption is seriously understated. At the present, the price of oil in world markets is about $34 a barrel. There are projections of perhaps softening demand, but I don't think in real terms it is expected to decline much below $30 a barrel, which suggests that the assumptions in the NGPA were wrong by a factor of two.

They apply only to that gas which will be decontrolled in 1985. In 1985 we expect to see a significant jump between the scheduled increases, the level to which gas will be deregulated under 102 and 103 of the NGPA, and the world market price. There is a significant gap in there, and you are going to see a sudden jump in a very quick period of time come January 1, 1985, under current legislation when that 60 percent of our total gas supply is deregulated.

We don't know what the effects, quite frankly, will be of indefinite pricing provisions. That spike could be worse than is presently anticipated, as it was anticipated in the DOE study, as I understand it.

The impact on consumers will be sudden, precipitous, and abrupt. It will be a sharp increase. The DOE—and I am not in a position to sponsor the DOE study, although I am familiar with it—anticipates that for the average home residential gas consumer, the price increase in 1 year is going to be about $170, which is a significant jump.

The second problem is that we think that there may very well be a regional maldistribution of gas under the Natural Gas Policy Act, because interstate pipelines, as a general proposition, have greater access to cheap, regulated gas supplies than intrastate pipelines do, and indeed among interstate pipelines there are apparently significant disparities.

The possibilities are quite large that we will see a very uneven distribution of the cost and benefits of well-head pricing policy in 1985 due to the inability of some pipelines to successfully bid for new incremental gas supplies.

That suggests serious problems in the producer States. One of the things that concerns me is that, if indeed intrastate pipelines are unable to purchase gas, political pressures will be created in producing States that may very well drive producer States to attempt legislatively to capture and preserve gas supplies for the use of their own citizens. I think it would not be surprising for the citizens of the producing States to take serious umbrage at their inability to use their own State's resources.

In southern Louisiana, most of the expected substantial prospects are under water. This is a fairly loose characterization, but according to Louisiana law, land that is under water is the property of the State. So the consequence is that it is not incomprehensible for one to see a proposition presented to the State legislature, as indeed I believe it was in 1977 under Gov. Edwin Edwards, which would create a State-owned oil and gas company to explore for and develop gas supplies for the use of the citizens of Louisiana. Well, that might very well have the effect of diverting substantial supplies of gas from the interstate market.

Similar types of propositions, perhaps using the eminent domain authority of the States, which is very broad under the Federal Constitution, might be employed in States like Texas and Oklahoma where the unique situation of Louisiana doesn't occur.

Another problem that we expect occurs under the Natural Gas Policy Act is in this allocation of capital. In this sense. We think, and we have a rulemaking which is designed to elicit some data to tell us whether we are right or wrong, that current law impels producers to drill shallow because the wells are cheap, or to drill deep because the gas is deregulated, but not in between. We are concerned seriously that substantial prospects in the so-called near-deep area, which we think probably runs between 10,000 and 15,000 feet, may very well not be being explored for and developed as they should. That's something that we hope to learn in the course of this rulemaking.

About 3 percent of our gas supplies are currently deregulated. That gas is 107(c)(1) gas under the Natural Gas Policy Act; that is, gas produced from below 15,000 feet. That gas right now is selling at prices on the order of $9 to $10 per MMBtu, which we believe is about twice the commodity value of the gas. We think that it is extremely badly overpriced.

The Natural Gas Policy Act provides for that kind of skewing because it permits prices above commodity value gas to be averaged with cheap regulated gas supplies.

Which leads us to another hypothesis, if you will, with respect to market disorder, and that is that the consumers of this country receive absolutely no benefit from partial regulation. The benefits of partial regulation go not to consumers, but to the producers of deregulated gas supplies.

So from our standpoint, rationalizing the market, while it doesn't provide a direct benefit to consumers in the sense that they are getting, if you will, a subsidy or a lower price for their gas, it does tend to rationalize the market and we think equally distributes the costs and benefits of wellhead pricing policy.

A final concern is this. If the hypotheses that gas prices could be higher than commodity values under the Natural Gas Policy Act are accurate, we expect to see the departure of substantial numbers of boiler fuel users from the market in 1985. In the event that that occurs, the loss of that load will shift substantially fixed costs of the pipelines and distribution systems to other consumers. Those include residential consumers. The fact is that about a third, we think, of our total demand for natural gas is comprised of boiler fuel demand, boiler fuel load, and we're afraid if that market is lost that those who will suffer, quite frankly, are those who pay home heating bills.

In this process—and I will finish these remarks very quickly—I think that it is useful to consider an interest group analysis. We take a look not only at the economic implications of the Natural Gas Policy Act, but also at the political implications. In terms of interest groups, we find that there are a number of producers who perhaps apparently, paradoxically, are opposed to total deregulation of natural gas. Those, by and large, are the producers of deep gas. They tend to lose a substantial portion of their subsidy in the event that we rationalize gas markets.

PIPELINES

The pipelines who have a substantial endowment of cheap regulated gas supplies tend to be losers in this game because they are the ones who have an advantage in terms of bidding for new gas supplies. Quite frankly, I have perhaps more empathy with that group than with any other with respect to their personal loss, because an argument can be made that good management practices, in the environment in which they had to live, were responsible for their ability to acquire those cheap regulated gas supplies.

Gas distribution companies. And you referred a few moments ago to Brooklyn Union Gas Co. Very well managed company. However, supplied by an interesting mix of pipelines. We think that two of its pipeline suppliers are those who will suffer under the existing regime. The numbers are not there yet for us to make a determination, but we do think that two of their pipeline suppliers are two of those who are less well endowed with cheap regulated supplies than others. So there is at least a question in my mind as to whether Brookyln Union as a company and its customers will win or lose under phased-in total decontrol as opposed to partial regulation of the NGPA.

I only point that out as an open question.

Industrial users, by and large, seem to favor the rationalization of gas markets. I think probably because it would provide them with some sense of certainty with respect to pricing and supplies.

OTHER CONSUMERS

I think, from what I have been able to glean of the representations of various consumer groups, that there may be some misunderstanding of exactly what their interests are. The numbers that I have seen—and you recited some a few minutes ago; AGA uses similar numbers—seem to me to be based upon an assumption that what is being discussed is immediate total deregulation of gas, which is not part of the proposal, and that nothing be done about in definite pricing provisions in gas purchase contracts, which is not part of the proposal.

If I am correct in that assumption, the numbers are very substantially overstated. I believe that there is another set of numbers provided in the DOE analysis, and they probably come a little closer to the assumptions that are consistent with the proposals the Department of Energy has made.

The last thing that I would like to suggest is this. If we are correct, and if there are substantial shortfalls of gas supplies in the intrastate markets, that implies substantial ripple effects that I think this subcommittee and other committees of the Congress probably need to spend some time thinking about.

Sixty percent of this Nation's fertilizer capacity is located either in the Mississippi River mouth or on the Texas Gulf coast. Those people rely largely on intrastate pipelines for their supplies. The implications, if they go belly up or price themselves very high on the market, is quite possibly a substantial decline in agricultural productivity. That has, I think, serious macroeconomic implications since the export of agricultural products largely offsets our balance of payments problems with respect to oil imports.

There are other similar types of effects. There is a substantial portion of the petrochemical industry as a group in that part of the country, and we expect that severe impacts on those companies and those plants could ripple throughout the entire economy. However, there are others that this subcommittee has the opportunity to call before it who are much more qualified to speak about those kinds of effects, and I think that what I will do at this point is to conclude these remarks and simply respond, as best I can, to your questions.

[The prepared statement of Mr. Butler follows:]

PREPARED STATEMENT OF HON. C. M. BUTLER III

Mr. Chairman and Members of the Subcommittee:

I very much appreciate the opportunity to appear before this Subcommittee to discuss the problems and challenges we face in natural gas markets. Despite the success of the Natural Gas Policy Act of 1978 (NGPA) in certain areas, major structural defects in the law have become apparent. These flaws will eventually result in serious disordering of natural gas markets and consequent rippling disruption of the economy. They have come to be known collectively as the "market ordering problem," and it is on this problem and its remedy that my statement focuses.

There is considerable irony in the consequences of the NGPA. The statute, providing for partial regulation of gas prices at the wellhead, was enacted in large part in response to problems caused by partial regulation of such prices. Under the Natural Gas Act (NGA), federal price controls applied to the sale of natural gas in interstate commerce. They did not extend to the sale of natural gas sold and consumed within the state in which it was produced. The result of this distinction during the 1970's was the coexistence of severe curtailments in the interstate market with ample supplies in the intrastate markets.

The primary flaw in the NGPA is that, rather than eliminating the dual market which existed under the NGA, the NGPA merely substituted another in its place, thereby creating a host of novel economic distortions in the newly integrated market for gas. The problems created by the NGPA's regime of partial regulation are evident in the supply problems of some interstate and intrastate pipelines, as well as in the higher than commodity-value prices being paid for deregulated gas. These problems promise to be aggravated dramatically when the amount of deregulated gas increases from less than 5 percent of total supplies this year to about 60 percent in 1985.

The dual market created by the NGPA finds its source in the Act's regulation of some prices, but not others. Other structural aspects of the NGPA interact with this one to create higher than commodity-value prices and a serious risk of regional shortages. First, the amount of gas that will be regulated until exhausted is significant. Second, the NGPA provides for a range of widely varying prices. Third, the NGPA ties the escalations of gas prices to a seriously understated assumption about the price of oil. Finally, the NGPA at least permits, if not prescribes, so-called rolled-in pricing with only insignificant limits. Taken together, these factors yield widely varying average gas costs among pipelines, both interstate and intrastate. This fact is crucial to an understanding of the market ordering problem.

A number of terms have come to be associated with the market ordering problem, two of which should be identified and defined. The sharp increase in gas prices expected in 1985 under the NGPA is called the "spike." The gas that will continue to be price-regulated under the NGPA is called the "cushion." Today's high prices for deregulated deep gas predictably result from the existence of the cushion, as will be pointed out.

Partial regulation under the NGA was geographical in nature in the sense that sales to the interstate market were regulated, while sales within the intrastate market were not. Within each market, however, regulation was either complete or nonexistent. There was no market within which regulation coexisted with deregulation. The NGPA largely eliminated the legal distinction between interstate and intrastate markets for natural gas. Through it, however, Congress adopted a new form of partial regulation which combined regulated and deregulated supplies. Under the NGPA, on January 1, 1985, deregulation of more than half the supply of natural gas will coexist in the same market with continued price controls on the remaining supply. This new system threatens to create problems at least as serious as those resulting from the distinction between interstate and intrastate markets under the NGA. Among the problems is a new economic distinction between the interstate and intrastate markets, based on the interstate pipelines' larger supply of price-controlled gas.

The gas cushion is unevenly distributed among pipelines now and, in the absence of legislative or administrative remedy, it will continue to be unevenly distributed in the future. This uneven distribution is the result of two factors. First, natural gas is purchased in the field market at different prices. Under the NGPA, prices range from 25 cents to more than $5 per MMBtu for regulated gas, and up to nearly $10 per MMBtu for some deregulated gas. Concurrently, the amount of gas controlled by a given pipeline in each of these pricing categories is idiosyncratic in the sense that it depends upon the pipeline's own historical and present management and buying practices. Since each pipeline will control different quantities of gas under the various pricing categories, the weighted average cost of each pipeline's supplies is unique or will coincide with the weighted average cost of another pipeline's supplies only as a matter of chance.

A useful way to view this phenomenon is that the relative "richness" or "poorness" of each pipeline, whether interstate or intrastate, will be reflected respectively and inversely in the lowness or highness of its weighted average gas cost. That lowness or highness is in turn directly dependent on the share of the regulated gas cushion controlled under contract by each individual pipeline. The consequences of this development under the NGPA will be examined in detail below.

The prices that currently confront, and in the future will confront, natural gas users are average prices. Lying behind those average pries is a broad range of field prices, but the consumer is not faced with the higher of those field prices because of the rolling-in process. Thus, in the absence of a true marginal cost pricing regime, there is no market discouragement of a pipeline's paying higher than commodity-value prices for incremental supplies of gas.

There is apparently relentless competition among pipelines for natural gas supplies. This competition is also apparently a major factor in the very high prices paid for the small supply of deregulated gas today. Logically, natural gas pipelines prefer to buy gas as cheaply as possible in order to preserve existing markets. However, competition among them makes cheap prices improbable. Because many can average high prices with low prices under the regime of the NGPA, pipelines can be expected to bid unregulated wellhead prices up, even above long-term market clearing levels, to a point where each pipeline's management decides, in the exercise of its business judgment, that it must desist from further bidding.

The theoretical bid ceiling for any pipeline is established by the ability of it and its distribution company customers to market natural gas to buyers of significant volumes at the margin. By and large, it is assumed that the marginal customers are large industrial concerns who use gas as boiler fuel. That marginal use has been estimated to comprise as much as one-third of the aggregate natural gas market. It is also believed that a large percentage of such customers have fuel-switching capability and that the alternative fuel is low sulfur No. 6 fuel oil. Obviously, this state of affairs may not exist on any particular pipeline, but there is strong evidence that the proposition holds on average. This suggests that the limit to which pipelines can bid their average, or rolled-in, gas cost is on average somewhat below the Btu-equivalent price of low sulfur No. 6 fuel oil, less transportation costs. As earlier stated, that price has been estimated by the Department of Energy to be approximately $4.56. This implies that pipelines will continue to pay prices which may be (and as we have seen, in fact, are) higher than commodity-value until their weighted average gas costs approach market clearing levels.

Three important consequences follow from this analysis. The first is that consumers will receive no direct benefit from the continuation of partial price controls after 1984. In the NGPA, Congress provided for continued price controls in order to protect consumers from higher prices. But the direct economic benefit of the low-priced regulated gas will not go to consumers; it will go the producers of deregulated gas through the competitive bidding process.

The second consequence is that the increase in the average price of natural gas in 1985 is likely to be both large and sudden. The NGPA was intended to achieve a smooth transition to decontrol by retaining controls on some gas after 1985 and by applying an annual escalator to the statutory price ceilings before that date. However, given market events since passage of the NGPA, continued price controls on some categories of natural gas will do little if anything to smooth the transition. The price escalator provisions applicable to those categories will be largely ineffective because the rates of escalation were based on the world oil market in 1977 and 1978. Within months after enactment of the NGPA, however, world oil prices more than doubled. Since 1979, oil prices have remained generally stable or even declined somewhat. However, even without further increases, existing oil prices imply a price for either completely or partially deregulated natural gas that is far above the NGPA's statutory price ceilings. Because of the price spike that will be created by the NGPA, the transition to substantially increased partial decontrol in 1985 is likely to be far from smooth.

The third consequence of our analysis is that partial deregulation in 1985 will have severe regional impacts. Each pipeline in 1985 will buy part of its gas at a price determined by the NGPA and part at a much higher deregulated price determined by the competitive bidding process. The average cost of gas for each pipeline and its customers thus will depend on three factors: the amount of regulated gas that it controls, the average price of that gas, and the price of the deregulated gas that it must purchase for the rest of its needs.

Because the price of deregulated gas is determined by a competitive bidding process, in theory it should be generally about the same for all pipelines. However, pipelines differ greatly with respect to the amount of regulated gas that they control and also differ significantly with respect to the price of that regulated gas. The national average burner-tip price of natural gas in 1985, therefore, is only part of the story of partial deregulation. That national average probably will be somewhere in the range of the price that would prevail under complete deregulation. The average cost of natural gas to individual pipelines under partial deregulation, however, will range from substantially below the deregulated price to substantially above that price depending fortuitously on each pipeline's endowment of the regulated gas cushion.

These cost differences will in turn result in shifts of supply, as pipelines with large supplies of inexpensive regulated gas are able to bid supplies away from less fortunate pipelines. The latter pipelines may include most intrastate pipelines and some interstate pipelines as well. In general terms, interstate pipelines that were in deep curtailment in the 1970's or are now facing average natural gas costs approaching parity with residual fuel oil are, at the least, candidates for being carried above the price that they would have to pay under complete deregulation.

The Commission, of course, cannot be certain of the precise consequences of partial deregulation under the NGPA. But the market ordering problem is not simply a matter of abstract theory. Indeed, in microcosm it exists now, and there is every reason to believe that, as partial decontrol continues, market disordering will increase. The most concrete evidence supporting this expectation can be found by looking at what is currently happening to prices for the unregulated gas produced from below 15,000 feet. Based upon PGA filings with the Commission, it appears that about 450 Bcf of this gas is being delivered annually to the interstate natural gas pipeline system. This comprises 3 percent of annual consumption.

Prices for this deep gas range from less than $2.00 to $9.7705 per Mcf. The average price is estimated to be about $7.00 per Mcf with a distinct upward trend in the prices -- as much as $3.00 per year in Louisiana and Mississippi and somewhat less in Texas and the Rocky Mountains. Generally each successive PGA filing shows more deep gas as well as higher prices. These volumes and prices may very well be the "tip of the iceberg," as intervenors in subject proceedings claim in their pleadings.

Even the average price for deregulated gas is far in excess of the long-term market clearing price. Certain interstate pipelines are induced to bid these prices apparently either because of their large cushion of low-cost, regulated gas or their desperation to acquire new gas supplies. A few intrastate pipelines have so far been able to match these bids; most, it appears, cannot. Yet this deep gas may be the only significant new source of supply in some parts of the country. */ As a result, the reserves to production ratio of intrastate pipelines appears to be declining.

Although the exact causes of the recent natural gas shortages in Texas are not yet clear, it appears that they may have been due in part to the bidding disadvantage that the NGPA creates for intrastate pipelines, and preliminary evidence raises the possibility of additional and more severe shortages next winter in both Louisiana and Texas. Shortages of this kind may confront other markets before 1985 as supplies of other high cost gas (from, for example, tight sands) come to constitute a larger share of the market supply. Deregulation of more than half of the natural gas supply in 1985 will not change the

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*/ The major areas supplying this deregulated gas are South Louisiana (170 Bcf onshore and 100 Bcf offshore), Mississippi (65 Bcf), the Anadarko areas of Oklahoma (40 Bcf), and Wyoming (30 Bcf).

nature of the problem, but it is likely to increase its seriousness dramatically. The Commission must be concerned with pressures that could develop as an inducement for producing states to capture and preserve gas supplies within their borders for the benefit of their citizens, obviously to the detriment of the interstate gas market.

Few analysts disagree that serious market disorder could occur in 1985 if the NGPA is not amended. Some, however, appear to believe that other factors will moderate the problem. It is argued that average costs under the NGPA's partial decontrol could be less than under total decontrol. It is also argued, and a DOE study confirms, that partial decontrol could yield somewhat higher supplies, tending to depress average wellhead gas prices. It has also been argued that pipelines will exercise self-restraint. Finally, it has been argued that "market out" provisions in contracts militate at least against the prospect of higher than market average gas costs under the NGPA.

However, the solution that directly addresses the imbalance of price-controlled gas is deregulation of all natural gas. How total decontrol should be accomplished is, of course, very important. Let me begin by suggesting what we should not do. I would be opposed to immediate, total decontrol of gas prices at the wellhead. The result, as the DOE study indicates, would simply be to speed up the timetable for the price spike expected in 1985 under the NGPA. There is a prospect for severe disruption of the market in the short run if this option is selected, and I believe it would be a politically impossible objective even if it were a desirable one.

I believe that the NGPA schedule should be adhered to for the deregulation of those categories of gas scheduled for deregulation in 1985. The deregulation of gas supplies scheduled for 1987 should be moved up to 1985, and gas that would remain indefinitely subject to NGPA price controls should also be deregulated on that date. All gas categories should be phased up to a target market clearing level by January 1, 1985. And, on that date, all regulation of natural gas prices at the wellhead should be terminated. Statutory provisions would deal with the contract problems for gas prices that would remain either above or below market levels through a requirement of renegotiation or otherwise. These problems could be dealt with in the period from the date of passage until January 1, 1985. Time extensions could be available under prescribed circumstances.

Under the kind of legislation that I have just described, consumers would confront a gradual escalation in their residential heating bills, rather than an abrupt one.

Complete deregulation, it must be made clear, is not without its costs. Any honest debate over natural gas policy must begin with the recognition that decades of price controls have created a problem for which there is no easy solution. Any alternative will adversely affect the interests of many persons. This is true of complete deregulation, but it also true of partial deregulation projected to occur in January 1985. There is and will continue to be debate over the precise magnitude of the market ordering problem that we will confront in the absence of legislative action. However, there is good reason to fear that it will be severely disruptive of both interstate and intrastate natural gas markets; and, uncertainty, confusion, and delayed institutional responses are likely to only further aggravate its disruptive effect. In the end, the uneven impact of partial deregulation is likely to create a game in which many will lose and few will win. It is against that prospect that the cost of deregulation must be measured.

Representative **Richmond.** Thank you, Mr. Butler.

It is my understanding that this past year your agency has raised the price of gas produced in deep water by 100 percent. Right?

Mr. **Butler.** That is correct.

Representative **Richmond.** You proposed a 50-percent price increase in gas found between 10,000 or 15,000 feet?

Mr. **Butler.** That is correct.

Representative **Richmond.** You proposed a category shift which would raise the price of old gas and eliminate vintaging of old gas prices, which would move older gas to higher price classes also. Right?

Mr. **Butler.** That is not correct. The Commission has at present a staff study in progress to determine whether we should notice a proposed rulemaking that would do that. But we have not proposed that.

Representative **Richmond.** I understand at previous hearings you have never been able to really quantify all of this. In other words, no one really knows how much gas is involved and what the magnitude is of the price increases. Do you have any more recent information on the changes, the proposed changes, on the effect of the prices, volumes of the amount of extra gas they might elicit? Because your whole concept, I assume, is to encourage producers to produce more gas. Correct?

Mr. **Butler.** That is only partially the purpose.

Representative **Richmond.** Well, by doubling the price on deep-water gas, what you are really doing is encouraging people to drill deep-water gas.

Mr. **Butler.** That is correct. There is one thing that I think needs to be made clear, and that is that the comments that were elicited during the course of the rulemaking on deep-water gas, Congressman, indicated very clearly that there is very, very little production of deep-water gas at present. We were hoping to try to provide some incremental supplies by raising the price. However, one thing that is important is that rather than raising the prices to levels which exceeded what we expect the commodity value of the gas to be, we capped it there. We capped it there. We are not allowing $9 and $10 prices for that gas; we are allowing a price that I think right now is about $5.14.

Representative **Richmond.** Except the proposed legislation would cap this gas at 70 percent of crude, which would be $4. Right? I understand some of it is now selling at $10.

Mr. **Butler.** I couldn't tell you, quite frankly, what that price is right now. I think it is probably closer to $4.50. But there is a range. What we did, Congressman, was this. We tried to work out what the range of probable commodity values were and we set the price at the upper end of the range, giving the benefit of the doubt to the incentive effect that that price might have.

Representative **Richmond.** Do you have any idea of how much more gas your various actions have created this last year and at what price?

Mr. **Butler.** Well, the rule was just issued.

Representative **Richmond.** Let me just ask you two questions. Basically, with what your agency has done this year, how much more gas have you created and how high have you raised the price?

Mr. **Butler.** I think I should answer your second question first and then the former.

In answer to the second question, the Commission has just recently passed the rule for deep-water gas. As far as that gas is concerned, there really hasn't been time for there to be any response. We don't expect to see any response for some period of time, because there is a lag between going out and sinking the rig, drilling, and so forth.

As far as the first question is concerned, how much gas have we elicited? Let me see if we've got those figures. There are two categories of gas that the Commission has provided incentive prices for in the past. That is the so-called tight sands gas and production enhancement gas.

I am advised that the increase in tight sands gas runs on the order of a couple of hundred billion cubic feet.

Representative RICHMOND. What I can't seem to understand is why a pipeline would pay a producer well above the equivalent for oil.

Mr. BUTLER. That's a very good question, and it is one of the ones that is more difficult to understand, quite frankly, Mr. Chairman. The problem is this, that every pipeline has a different average cost of gas because they control different quantities of different pricing category gas and they each have to take a weighted average. It's sort of idiosyncratitc in the sense that it depends on the historic and present buying and management practices of each individual pipeline. As long as the pipeline is able to buy gas at any level of price and average whatever that price is, given the quantity of gas, with his old gas supplies, or his average gas costs, and he does not go up above commodity value levels, he doesn't lose customers, so he can afford to do that.

We are saying right now, I think—and I must emphasize I think, because we don't have a definite answer at this point in time.

Representative RICHMOND. In other words, they pay these prices for deep well gas just to get the volume?

Mr. BUTLER. I think that's it exactly. There are a number of pipelines out there who probably are in somewhat more precarious a gas supply situation than others who feel impelled for one reason or another to pay prices that high so that they are going to have access to the gas, be able to meet their utility obligations, serve their customers.

Representative RICHMOND. We have been reading an awful lot that oil has slackened off and we understand that the price is gradually going down. In fact, the spot market is, I think, $2 or $3 lower than the fixed price. Right? One can really buy oil nowadays at $30, $31 a barrel.

Mr. BUTLER. We are definitely seeing a softening in the demand for oil.

Representative RICHMOND. What effect would that have on gas? Particularly as you deregulate gas, will you be able to get the high prices you are expecting to get for gas?

Mr. BUTLER. I think the answer to that is probably no.

Representative RICHMOND. In other words, what we are talking about, the 1985 figures aren't necessarily engraved in granite. Right?

Mr. BUTLER. They are not. They are not carved on a rock.

Representative RICHMOND. Would you try to explain that to me?

Mr. BUTLER. Pardon, sir?

Representative RICHMOND. Try to explain that to me. In the case of oil we know that the market seems to have a great deal to do about the price, and in the next 5 years the chances are that oil won't go up too much because we are developing other means of fuel and conserving and what not. Now tell me a little about gas.

Mr. **Butler.** Well, gas prices are largely driven by oil prices because an oil product is, at the margin, the substitute fuel for natural gas.

Representative **Richmond.** And many users can use either oil or gas.

Mr. **Butler.** Right. Here is the way the analysis works. We think about a third of the total national demand for natural gas is boiler fuel. Now those buyers, as a general proposition, have fuel switching capabilities which allows them to burn some other product. In most cases we believe that the alternative fuel for America's industrial boiler fuel users is low sulfur No. 6 fuel. The commodity value of gas is going to rise or fall, if we are correct, with the rise and fall of the price of No. 6, of low sulfur No. 6 fuel.

Representative **Richmond.** And I assume coal.

Mr. **Butler.** If you make the assumption that the price of oil declines and everything else stays constant, that suggests to you that the commodity value of gas is going to decline as well, which means that some of these effects that we are expecting to see in 1985 may be mitigated; that in order to eliminate them the price of oil is going to have to decline all the way down to that $15 level that Congress projected back in 1977 and 1978. That we do not expect.

Representative **Richmond.** Some people say it might decline as low as $20. I don't believe that either.

Mr. **Butler.** Of course, you're always on shaky ground when you are trying to make forecasts about commodity prices, but I think that probably something on the order of $30 by 1985 is a little bit more secure a forecast.

Representative **Richmond.** In other words, you really think that oil will be selling in 1985 at the same price it is selling today?

Mr. **Butler.** Well, we expect that it is going to be selling at a somewhat lower price. Up until just recently the price of oil has been about $34. I think that the people over at DOE, and specifically at the Energy Information Administration, are much more qualified to make those projections than I or our agency. But I believe what they are looking at is about $30 oil in 1985.

Representative **Richmond.** And you are factoring in, I suppose, the additional supplies of oil, additional supplies of gas, use of coal, use of other methods, and conservation?

Mr. **Butler.** That's correct, and we are also talking about dollars in 1981 terms, so we are eliminating the effects of inflation.

Representative **Richmond.** Oh, you're talking about constant dollars, obviously.

Mr. **Butler.** Constant dollars.

Representative **Richmond.** So if you want to take a 10-percent inflation for the next 3 years——

Mr. **Butler.** Well, what you've got is, if you are talking about inflated dollars, it may be $40.

Representative **Richmond.** Do you really feel that oil will stay at $30 for the next 3 or 4 years?

Mr. **Butler.** I think that's what EIA is forecasting right now. Of course, events can change.

Representative **Richmond**. Of course, the present recession makes things a lot worse.

Mr. **Butler**. Well, we couldn't forecast the fall of the Shah of Iran and what happened in Iran in 1979 and the consequent doubling of oil prices which are good object lessons for us in trying to forecast what is going to happen in 1985. It is not inconceivable if we had a cataclysmic flareup in the Middle East we might lose all oil supplies from there, and if in the event that happens you might see oil prices double rather than stay the same. We just don't know. It is very difficult to try to predict that kind of event.

Representative **Richmond**. Mr. Butler, has the President asked you for a study on the effects of natural gas deregulation?

Mr. **Butler**. He has not. I must say one thing that I have been very happy with is the fact that the administration has had great respect for the independence of the agency as a regulatory authority. So the consequence is neither have they asked me to participate in their deliberations on these issues nor have they asked us to provide particular kinds of information. That is being done at the Department of Energy.

Representative **Richmond**. I assume your agency makes the distribution of gas a lot more equitable throughout the United States, working under the present legislation. If we didn't have your agency we would just be subject to market fluctuations like oil. Correct?

Mr. **Butler**. Well, that's correct, although the agency does a lot more than just administer the Natural Gas Policy Act. We also are responsible for rates and certificates for natural gas pipelines; we're responsible for wholesale sales of electricity in interstate commerce; we're responsible for the licensing of hydroelectric projects; we're responsible for the rates of oil and product pipelines; and so forth. So the Natural Gas Policy Act only comprises a relatively—well, it comprises perhaps 20 percent of what the Commission does.

Representative **Richmond**. And, of course, an awful lot of your involvement is the transportation of gas.

Mr. **Butler**. That is correct.

Representative **Richmond**. Do you think there is any need for any legislation in that field?

Mr. **Butler**. That is a question that I am frankly not prepared to answer at this point in time. I think that the Commission is going to have to reconsider a number of its policies with respect to natural gas transporters in the event that we do have deregulation of natural gas. Those questions come in the area of rate design and so forth. They are frankly fairly arcane kinds of problems.

Representative **Richmond**. Just to sum up your visit, Mr. Butler, assuming that oil stays at a constant $30 through more discoveries of oil, more discoveries of gas, more utilization of coal, no serious flareup in the Middle East, even after gas is deregulated in 1985, what will the consumer be paying?

Mr. **Butler**. I can only give you the estimates.

Representative **Richmond**. In other words, how much more will the consumer be paying for his gas than he is paying for his oil proportionately?

Mr. **Butler**. First of all, as far as the difference between oil and gas is concerned—and I think that I can fairly flatly make this statement. I feel reasonably comfortable with it at this point—we think that gas prices are driven by the price of low sulfur No. 6 heating oil. Now consumers, in the sense that we all normally think of them; that is, home heating oil users, typically burn No. 2. They don't have the facilities to burn No. 6. No. 2 heating oil is much more expensive than low sulfur No. 6. What that suggests to you is that the price of gas is going to remain, quite frankly, a bargain in comparison to No. 2 heating oil.

Representative **Richmond**. Can you quantify that? Can you tell me what the bargain is going to be in 1985?

Mr. **Butler**. That I cannot tell you because I don't have the oil price.

Representative **Richmond**. But we're taking oil at a constant $30.

Mr. **Butler**. If you could excuse me for just 1 second, perhaps I do have those numbers.

The numbers that we have, which I believe come from DOE, indicate that the anticipated 1985 price in 1981 dollars——

Representative **Richmond**. Well, we obviously have to keep using constant dollars.

Mr. **Butler**. 1980 constant dollars. The price of distillate fuel oil in 1985 is expected to be on average about $7.13; the residential heating price for gas is expected to be about $6.59. So there is a spread of, say, a half a dollar, something like that. This is on a Btu equivalent basis.

Representative **Richmond**. So what you are saying is that by 1985, assuming that oil stays reasonably stable, assuming that this Nation keeps conserving and developing coal and oil shale, natural gas deregulation shouldn't cause the price of natural gas to be any more than the price of oil. Is that correct?

Mr. **Butler**. We expect that to be the case. Yes, sir.

One thing that I would like to go back to as we talk about this is the projection that whether we have partial decontrol under the Natural Gas Policy Act or phased in total decontrol under the proposed legislation, that price isn't going to change.

Representative **Richmond**. I agree with you.

Mr. **Butler**. And quite possibly, quite possibly—and this is the thing that I think is very important to emphasize—quite possibly that price under partial deregulation could be higher.

Representative **Richmond**. Mr. Butler, I am so grateful for your coming and giving us such a comprehensive summary in just 30 minutes.

Mr. **Butler**. Thank you very much for the opportunity to be here, Congressman.

Representative **Richmond**. We look forward to hearing from you again. I would like the privilege of sending along another 20 or 30 questions, and we'll keep the record open for 2 weeks. Will that you enough time to answer them?

Mr. **Butler**. That would be just fine.

Representative **Richmond**. Thank you very much.

Mr. **Butler**. Thank you, sir.

Representative **Richmond**. Our next panel is Mr. Ed Steimel, president of the Louisiana Association of Business and Industry; Mr. David W. Wilson, president, Association for Equal Access to Natural Gas Markets and Supplies of Denver, Colo.; Mr. Gordon Gooch, an attorney with Baker & Botts; and Mr. Chris Palmer, director of energy and environment of National Audubon Society.

Good afternoon, gentlemen, and welcome.

If you would all like to take 5 minutes to summarize your statements, we will include your entire prepared statement as part of the record. I am sure it will be much more interesting for everyone, including our audience.

So why don't we start with Mr. Gooch.

STATEMENT OF R. GORDON GOOCH, ATTORNEY, BAKER & BOTTS, WASHINGTON, D.C.

Mr. Gooch. Thank you, Congressman.

My name is Gordon Gooch, and I am a lawyer with the law firm of Baker & Botts.

I understand that I was invited today in a personal capacity, and so I speak not for the firm or any of its clients. I understand that I was asked because of my past experience as general counsel of the Federal Power Commission and more recently as legal counsel to a broad spectrum of clients from the wellhead to the burner tip.

To state my conclusion first, I believe it is in the best interest of all of us to go for a decontrol of natural gas rather than to maintain the status quo or to reregulate the price of gas at the wellhead.

Mr. Butler has so well covered the two main problems that I can skip over those very quickly. The two main problems I would like to call to your attention are the problem of the gap and the problem of the cushion.

The gap problem, which he so well described, is the fact that the price of oil somehow got away from the projections made in 1978, and one of the charts that I put in there, chart 1, indicates the great disparity today in energy costs among competing fuels, and we have the projections made last year by EIA and DOE with respect to what the oil price would be in their best guess in 1985, one of them saying $37 a barrel, the other saying $44 a barrel in 1985.

Representative Richmond. Mr. Gooch, what kind of dollars are these?

Mr. Gooch. The $37-a-barrel figure is in 1979 dollars and the $44-a-barrel figure is in 1981 dollars. It shows on my chart here. But what I want to point out is that I would strongly anticipate——

Representative Richmond. In other words, their figures are much different than Mr. Butler's. Right?

Mr. Gooch [continuing]. Well, these are the figures this time last year, and I would strongly suspect that there will be a reduction in those estimates when the figures come out this year.

Representative Richmond. Do you agree with Mr. Butler?

Mr. Gooch. Do I agree with Mr. Butler on what, sir?

Representative Richmond. That oil will be roughly at $30 a barrel in constant dollars in 1985.

Mr. Gooch. I would like to believe that, sir. I would like to believe that, but I'm afraid I can't. I think with the political instability factors and with the current recession and with other problems that it's very, very risky to make a projection that oil prices will remain stable or go down between now and 1985. I would say, if I was going to book a bet, I would have to have very great odds to make that bet.

Representative **Richmond**. On the other hand, by 1985 you should have 30 or 40 million more fuel efficient automobiles on the road——

Mr. **Gooch**. Yes.

Representative **Richmond** [continuing]. Which is going to make a big difference.

Mr. **Gooch**. We also have a declining resource base in this country; and we also have the problem that we are not being able to build synthetic fuel plants; and we are not being able to convert to coal. And there are a lot of offsetting factors. We also have to worry about whether there is going to be enough No. 6——

Representative **Richmond**. Why do you say we are not "being able"?

Mr. **Gooch** [continuing]. To do what, sir?

Representative **Richmond**. To convert to coal and build synthetic fuel plants.

Mr. **Gooch**. Well, the projections that DOE makes for the synthetic fuels industry I would say are relatively bleak right now, and I don't really believe that anyone is clinging to a heavy synthetic fuel industry in the 1990 range.

But leaving that aside, the price would have to fall so drastically that, whether the price is $37 a barrel or $30 a barrel or $34 a barrel, the problem remains that there most likely is going to be a gap. But I say that, whether there is going to be a gap or not, that's only one problem, and that's the easiest problem. The hard problem is the problem of the cushion, and the reason we have a cushion problem is that every pipeline does not have equal access, equal amounts of the multitudes of price controlled gas.

I have tried to put in some charts from Foster Associates showing—it looks like saw teeth—what the different average cushions on the major interstate pipelines are going to be in 1985 and 1990. It shows instability. And another chart shows the States where there are pipelines serving those States that do not have as much cushion as other pipelines, and there are very few States that are spared.

So when you then aggregate the data by regions and look at the different average costs among gas consuming regions, there are really, in my view, no regions of the country that can say I'm going to be a winner in this game. Let the rest of the country go down the tubes, but I'm going to be a winner. I submit that it is a very serious nationwide problem and needs to be addressed.

Most of the talk today, I assume, will deal with the projection as to what the problem will be in 1985. I would like to say we have problems today. Very, very serious problems today.

Let me pick up again on the deep deregulated gas. I want to preface this by saying that the gas industry is acting rationally, although the results may appear to be irrational. All they are doing is playing the game by the NGPA rules. Consider the deep deregulated gas commanding prices in the $10 range. These prices appear to be substantially in excess of any market clearing level, particularly when you have to add transportation and distribution costs onto that.

One might well ask how can any rational pipeline pay those kind of prices. To me the answer is very clear. The Natural Gas Policy Act encourages this type of conduct. Not only was only a very narrow slice of gas deregulated, now approximately 3 percent, but in addition to that, the act insulates those contracts from triggering other people's contracts. So they've got a little walled off garden to farm in.

In addition, the Congress put a very high threshold of incremental pricing on that deep deregulated gas, substantially removing the risk that the pipelines would have to incrementally price that to their industrial customers. So what else would you expect? The Natural Gas Policy Act gave a preference to this type of activity, and neither the producer who charges that price nor the pipeline that pays it should be criticized.

Now the problem, though, is that that gas can be marketed only if there is a cushion, and every pipeline doesn't have an equal amount of cushion, and some pipelines can't bid for it at all. So what happens? What happens even to the pipelines that do bid for that gas? Well, sometimes they can't swallow it.

So we've had another phenomenon to deal with, and that's the phenomenon of the off-system sale. Now you have, not only for the deep gas reason, but also, when you consider the situation that with price controls on gas the pipelines can't bid against each other always on price, they have to bid on nonprice terms such as take or pay. So that induces the pipelines sometimes to offer higher takes than they can accommodate in their system, more than they need. So what do they have to do? They have to go to the FERC and get permission to dump the gas, dump the gas to the have-not pipelines at a very reasonable cost, masking the true gas supply situation.

Now this is directly attributable again to the Natural Gas Policy Act.

This can't go on forever. It can't even maybe get us to 1985. What you are going to hear now, with this combination, is that the symptoms, the symptoms of the Natural Gas Policy Act must be treated, not the cause.

The claims are going to be made that the Congress must override these producer contracts on such matters as maybe the deregulated deep, or maybe take or pay clauses, maybe other things, so that the pipelines can keep the gas but not pay what they contracted to pay for it.

Now treating the symptoms while leaving the cause intact may be good medicine, but it's bad law.

The producers, whether large or small, are not stupid. But that has to be the underlying premise of any move to frustrate their contracts through extension of Federal regulation. One would have to believe that their incentive to explore for new supply and develop current reserves on an optimal basis would not be adversely affected by reimposing price controls, however disguised, as contract or other controls, and price controls lead to demand controls, such as the Fuel Use Act, and the misallocation of resources, to curtailments and reallocation of available supply by the Federal Government.

The ultimate losers here are the consumers, the homeowners, the commercial, the agricultural, the industrial, and electrical utility consumers.

Now, looking at the industrials, they are going to lose this game either way. They are going to lose under the status quo; they are going to lose under a reregulation scenario.

Representative RICHMOND. When you say lose, are they going to lose in relation to oil? Put the word "lose" into some type of context.

Mr. GOOCH. Let me put it in two contexts. They are going to be unable to get a gas supply, either because the price is so high they are priced out of the market competitively under a status quo situation, under the NGPA, because the pipelines with the deep cushion can bid the prices so high that they can't meet this high price and they have to go out of business or they have to switch to oil. Now all industries can't switch to oil. The petrochemicals, for example, cannot switch to oil for their feedstock process, nonboiler fuel.

Louisiana is a good example of that; and Texas. So you say shut down the petrochemicals in Texas and Louisiana and let's keep the gas for residential consumers in other States. You shut down the petrochemicals in Louisiana where over half the petrochemical capacity is located, and you have shut down, you have affected 32 percent of the industrial base in this country.

Representative RICHMOND. Well, you shut down American agriculture.

Mr. GOOCH. And you have also shut down pharmaceuticals, plastics; you've shut down manmade fibers in the Carolinas; you've shut down the automobile industry for their tires and other rubber products. So it is a nationwide problem. No one in any region can take comfort from the fact that another region may be worse off.

Representative RICHMOND. Well, let me let you sum up, Mr. Gooch.

Mr. GOOCH. I will sum up by saying that the problems of the Natural Gas Policy Act are now, the symptoms are here today.

Representative RICHMOND. What do you think ought to be done?

Mr. GOOCH. Sir?

Representative RICHMOND. What do you think ought to be done?

Mr. GOOCH. I think you ought to move toward the deregulation of the wellhead price of natural gas as to price controls, contract controls and allocation controls.

Representative RICHMOND. You mean, not do it in an orderly fashion from now until 1985 but do it right away?

Mr. GOOCH. I understand that it takes time for people to make adjustments, and a short phaseout I think would be practical and in order.

[The prepared statement of Mr. Gooch follows:]

PREPARED STATEMENT OF R. GORDON GOOCH

Thank you, Mr. Chairman, I am Gordon Gooch of the law firm of Baker & Botts. It is my understanding that you wish me to provide my personal perspective on the economic implications of natural gas regulation and deregulation by the Federal government, a perspective which I have gained as General Counsel of the Federal Power Commission, and more recently as legal counsel to a broad spectrum of clients from the wellhead to the burner tip. The views I express here are my own and not necessarily those of any client or clients, or of the Firm.

The conclusion I first reach is that the Natural Gas Policy Act of 1978 1/ does not and will not achieve a stable and orderly market for natural gas nor an optimum supply of natural gas. I further conclude that these objectives will most likely be achieved through deregulation, and by deregulation I mean termination of federal price controls, federal contract controls, and federal controls over the allocation of gas (which grant preferences of access to gas supply in the producing fields).

In reaching these conclusions, I intend no disrespect toward the effort of those Members of Congress who worked long and hard to arrive at the several energy related Acts in 1978, of which the NGPA was one. Opinion was sharply divided at the time in and out of the Congress, even among many who may be classified in the same group. But now the situation must be examined by supporters and opponents, as well as the substantial number of new Members. For starters, I suggest that the "Gap" and the "Cushion" problems be examined first, then the "Present" problem.

The "Gap" Problem

As it turns out or as may have been predictable, there is a fatal flaw in the NGPA. That flaw resulted from the prediction in 1978 of what the 1985 crude oil price would be and, using that single projection as a target price, moving the regulated ceiling price of gas towards that target. Since oil prices have significantly increased since then, the result to be anticipated is that there is and will be a significant gap between the regulated price of gas and the price of oil, now and on January 1, 1985. 2/ Chart One provides some indication of the current disparity in energy prices. Chart Two displays the projected cost of crude oil, 6 oil, and coal in 1985, as reported by the EIA and the DOE.

January 1, 1985, is a critical date, since somewhere between 40 and 60 percent 3/ of the then current gas supply will be freed from some or all federal controls, and significant price increases can be anticipated, while, at the same time, significant quantities will remain under low price controls. This, in and of itself, can be either good or bad, depending upon one's perspective, but, either way, it is, in all probability, an inevitable result.

In my view, the debate centers over the question of what the average price of gas will be in this situation.

In general, there are three schools of thought. I will attempt to characterize each school, using current gas prices for illustrative purposes. According to the EIA, the current average wellhead price is $1.95/MMBtu, 4/ but some currently deregulated gas - the 107 deep gas - is commanding prices in the range of $10. 5/ To place these numbers in perspective, the average homeowner in September 1981 paid $4.96 for gas and $8.63 for home heating oil, and the average price for 6 oil used by utilities and heavy industry was $4.77, all on an MMBtu basis to facilitate comparison. 6/

In descending order, one school suggests that the price of some or all deregulated gas will go to the $10 range, one inference being that the price of gas to the homeowner would meet or exceed the home heating oil price.

Another school suggests that the average price of gas will "fly up" above the long term market clearing level, using 6 oil as the test, one inference being that many industries and utilities would turn to the oil market, which could not easily respond without increased prices and imports.

A third school suggests that the price of gas will go to, but not above, the long term market clearing level, so that the NGPA, as is, is acceptable.

In my view, the middle school has the best of the argument. This school is well represented by experts from the DOE, the EIA, and the FERC, and I could not improve on their work, referenced here. 7/

I will not comment on the other two schools, other than to say that I perceive that their ranks have been significantly reduced. Without characterizing the testimony in any way, it was significant to me to compare the testimony of AGA and INGAA before a Senate subcommittee in the Spring of 1981 8/ with their testimony in November of 1981. 9/ By November both groups were indicating fear of serious problems if the NGPA is not modified.

The "Cushion" Problem

It would be helpful, if not comforting, if I could say that the resolution of this question relating to average gas prices is the only one this Committee should address, but it is not. In a sense, it is the easiest question to address; and even if one were to indulge in the hope or speculation that the world oil price will fall to the price range projected in 1978, the following problems remain.

One serious question which must be addressed is the question of what happens to consumers on individual pipeline systems under the NGPA. It is not possible to look only at national averages, because, under the NGPA, national averages are virtually meaningless.

Under the NGPA, the categories of gas specified for various levels of regulation and deregulation are reckoned in the dozens. 10/ If every pipeline had approximately equal percentages of the various categories, then national averages might mean something. But this is not so.

Some pipelines have a disproportionate amount of gas that remains under permanent price and allocation controls.

We all refer to this as a "cushion" of cheap, price controlled gas.

Those pipelines with the largest "cushion" will not only be able to outbid their competitors, since they can "roll in" deregulated gas prices with the cheap, price controlled gas; they will also have the ability to drive the price of gas above market clearing levels on the other pipelines, whose producer contracts may automatically escalate to the high prices paid by the advantaged pipelines with the "cushion."

Several efforts have been made to quantify the "cushion." One such effort is by Foster Associates, Inc., examining some of the largest interstate pipelines. The Petrochemical Energy Group provided charts based upon Foster data to the Senate Energy Committee, and I have taken the liberty of including some of these charts here.

Chart Three is a table projecting the 1985 gas price on these pipelines. In my view, proper understanding of this information requires appreciation of the fact that Foster Associates assumes, for purposes of this study, that there will be a single price for deregulated gas. Thus, in my view, this table really shows the amount of "cushion" that each pipeline has. You will note a wide variance among pipelines.

Chart Four depicts graphically the same data in 1985 and in 1990, again illustrating the wide variance in available cushion.

Again, on the premise that the pipelines with the most cushion have a competitive advantage over other pipelines, Chart Five is a map which indicates which States are served by one or more interstate pipelines with a less favorable cushion, meaning that some customers in those States risk loss of supply and inordinately high gas prices. Few States are spared.

Chart Six aggregates the Foster data by gas consuming regions, indicating that some consumers in the regions shown will be relatively worse off than other consumers in that same region, based upon the happenstance of which pipeline or pipelines provides gas.

This Foster data relates to certain interstate pipelines. Consideration must also be given to consumers on intrastate pipelines, such as in Louisiana and Texas. According to one EIA report, the average cost of flowing gas in 1985 on the former intrastate market will be three times higher than the cost of flowing gas in the interstate market. 11/ The most current EIA statistics show a steady decline of intrastate reserves relative to those dedicated to the interstate market. 12/

In a worst case scenario, in 1985 the States dependent upon intrastate pipelines will lose between 10 and 33% of their intrastate gas supply, either through diversions to pipelines with a cushion who can bid away gas flowing under expiring contracts or through lack of demand due to high prices. 13/

While some in other regions may be indifferent to major disruptions of supply and price in the gas producing regions, the impact will be felt, severely, in other regions. As one example, consider that well over half of the primary production of petrochemicals takes place in Texas and Louisiana. These petrochemicals are not consumed in that region. They are shipped to the Carolinas where they appear as man-made fibers for the textile industry, to Ohio and Michigan where they appear as automobile tires and other essential components for the transportation industry, to New England and elsewhere as plastics; and, to shorten the geography, they appear nationwide as fertilizers, pesticides, medicines for animals and humans, as paints and coatings, as packaging for food and other products; and they are exported abroad, gaining one of the few bright spots in our balance of payments. In 1980, petrochemicals, combined with petrochemicals dependent manufacturing represented 32% of U.S. manufacturing activity. 14/

And if this reality does not suffice to cause nationwide concern, perhaps it will do to point out that the same kind of disruption will occur in other regions.

Already the states of North Carolina, New York, Wisconsin, and California, to name some, have filed with the FERC claims that their states cannot live with the status quo under the NGPA. 15/

What can be done? Essentially, there are three options. One, the NGPA can be allowed to run its course.

Two, the federal government can extend regulation of natural gas, returning to a pervasive regulatory scheme of price, contract, and allocation controls, either at the producer level or at the pipeline level, using the model of the EPAA oil price and allocation controls, with its buy/sell and entitlements concepts to "even out" supply and price. Three, the federal government can deregulate natural gas at the wellhead.

In my view, the third option is the best alternative. I believe that the price of gas will be competitively and reasonably priced under this option, particularly compared to the NGPA case, and I further believe that the supply of gas will be optimized compared to either the NGPA case or the re-regulation case. The price of gas could be less under the re-regulation case, but, as experience has shown, federal regulation leads to artificial shortages and allocations of supply.

I commend for Committee consideration the report of the EIA in response to an inquiry from Senator Metzenbaum, which concludes that deregulation would enhance supply of gas and would mitigate the cost of natural gas to the consumer. 16/ These views have most recently been affirmed by the Council of Economic Advisors (CEA) to the President and transmitted to the Congress February 6, 1982, where the CEA claimed that average 1985 prices under the NGPA are not likely to differ greatly from those that would evolve under full decontrol. The NGPA forces some consumers to subsidize others, the report concludes, and "[p]rice controls are a costly and inefficient method of avoiding the adverse effects of rising fuel prices." 17/

Indeed, it would be well to review again the November 10, 1980, report to the Secretary of Energy, "Reducing U.S. Oil Vulnerability: Energy Policy for the 1980's" wherein it was recommended that natural gas be decontrolled, albeit with a windfall profits tax. 18/

The "Present" Problems

So far I have concentrated on the problems anticipated in 1985. It would be misleading if I quit now, because there are problems now. I will comment only on a few. Allow me to preface these comments with the affirmation that the gas industry, as a whole, is acting rationally, although the result may appear irrational. All they are doing is playing the game according to the NGPA rules.

First, consider the deregulated deep gas commanding prices in the $10 range. Since these prices appear to be substantially in excess of the market clearing level, particularly when transportation and distribution costs must be added, one might well ask: how can this happen? The answer, I believe accurate, is that the NGPA encourages this. Not only did the NGPA free only a relatively small percentage of gas while maintaining otherwise pervasive price controls on other gas, it went further and (1) insulated any prices paid for this gas from being used as a reference price in other gas contracts 19/ and (2) virtually eliminated the risk that the gas would have to be incrementally priced to industrial users under Title II of the NGPA. 20/ So neither the producer who sells this gas nor the pipeline who buys it should be criticized.

But this gas can be marketed only if there is sufficient cushion of price controlled gas--and therein lies the problem. Again, every pipeline cannot afford to bid for this gas.

And those which do sometimes face serious problems, leading up to, and including, the next phenomenon, the off-system sale.

In oversimplified terms, many pipelines seek to dump gas to the "have-not" pipelines. While the have-nots may not be able to compete for gas in the field, some can buy "surplus" gas at bargain rates. This "surplus" may include not only deregulated deep gas, but also gas which market conditions have required the buying pipeline to purchase in quantities in excess of current needs.

This last point is also directly attributable to the NGPA. When the parties are not permitted to bargain on price, they bargain on other terms and conditions, such as take or pay clauses, which require minimum deliveries. There is nothing wrong with take or pay clauses; they perform an essential function, but the NGPA induces producers to demand and induces pipelines to accept terms which pipelines may not be able to live with, not only now, but in the future when price controls on "new" gas expire. Again, neither the producer nor the pipeline should be criticized for this.

The net result of these and other aspects is that a vicious circle has been created. Some pipelines are barred by price or by federal allocation controls, such as on OCS gas, from access to gas supply. Other, more fortunate pipelines--at least fortunate for now--do acquire these supplies. Some pipelines are dumping gas to other pipelines, thus masking the true gas supply situation. Again, this is a perfectly rational thing to do, given present circumstances.

But what you will now hear is that the symptoms must be treated, not the cause. The claims will be made that the Congress must override contracts on such matters as deregulated prices and take or pay clauses, so that the purchasing pipelines may keep the gas but be relieved of their bargains.

Treating the symptoms while leaving the cause untouched may or may not be good medicine, but it is bad law. The cause is the NGPA, and it should be addressed directly.

The producers, whether large or small, are not stupid. But that has to be the underlying premise of any move to frustrate their contracts through extension of federal regulation. One would have to believe that their incentive to explore for new supply and to develop current reserves on an optimal basis would not be adversely affected by reimposing price controls, however disguised as contract or other controls. And price controls lead to demand controls, such as the Fuel Use Act, and to misallocation of resources and to curtailments and reallocation of available gas supply by the federal government.

The ultimate loser in this game is the consumer, be they homeowners, commercial, agricultural, industrial or electric utility. They must fight a civil war in the Congress and in the federal and state agencies for preferences, both as to price and as to supply, and, if history repeats itself, the industries and utilities will lose. The losers who can will mainly pursue oil as an alternative, notwithstanding the apparent price advantage of coal, since the problems with coal use are so severe. The losers who cannot use oil--those who must use gas for feedstock, process, plant protection, and other nonboiler fuel uses as well as those who cannot secure an oil supply at prices which allow them to compete against foreign and domestic competitors--must respond by cutting or eliminating production and jobs.

In my view, industrial users and utilities cannot sit idly waiting for a decision to be made. Plans must be made now as a hedge against either the status quo or against the possibility of a reimposition of controls on gas, and some of these plans will be desperate ones, diverting capital and other resources from more productive pursuits.

And the FERC will be further inundated with petitions and complaints from across the spectrum of interests, pleas for some mitigation of the inevitable consequences of the status quo. In some ways, the NGPA allows the FERC some ability to mitigate the harm--but not to correct it. Thus, as things go wrong, no one will be able, in good faith, to blame it all on the Bureaucrats. Hopefully, the Commission will use the limited power it has wisely and well. I do not envy them. Every action they take will be challenged and delayed in the Courts and in the Congress through oversight hearings, if nothing else, and I would be less than candid if I did not include myself in the class of potential challengers. Out of the crucible of contested rulemakings and adjudications, fired by the heat of conflicting interests, will come results that are, or appear to be, arbitrary, incomplete, inconsistent, and contradictory; but this is the predictable essence of federal economic regulation, when the Government becomes the surrogate for market forces.

I do not suggest that all problems will be solved and that we will all live happily ever after if the NGPA is amended to allow a complete deregulation of natural gas at the wellhead. But I do suggest that our problems will be less than under the status quo or under an extension of controls.

In closing, allow me to say that your unsolicited invitation to appear today is an honor. I hope that I have been helpful, and I will be pleased to answer any questions that I can.

ENDNOTES

1/ Natural Gas Policy Act of 1978, 15 U.S.C. §§ 3301-3432 (1975-79 Supp.).

2/ DOE, A Study of Alternatives to the Natural Gas Policy Act of 1978, at 12 (November 1981) [hereinafter cited DOE Study of Alternatives].

3/ EIA, Analysis of Economic Effects of Accelerated Deregulation of Natural Gas Prices, A Synopsis, p. 1 (August 26, 1981).

4/ EIA, Monthly Energy Review, at 85 (January 1982) [hereinafter cited EIA Monthly].

5/ The highest reported price bid for § 107 deep gas is $9.97/MMBtu. 1325 Foster Natural Gas Report 16 (August 13, 1981).

6/ EIA Monthly, *supra* note 4, at 85, 82 and 76, respectively.

7/ *See* R. Means, A Preliminary Analysis of the Natural Gas Market Ordering Problem (Policy Study No. 15, Center for Energy Studies, University of Texas (1981)) (Means is currently Director, Office of Regulatory Analysis, FERC); DOE Study of Alternatives, *supra* note 2; EIA, An Analysis of the Natural Gas Policy Act and Several Alternatives, Part I, The Current State of the Natural Gas Market (December 1981) [hereinafter cited EIA Current Market].

8/ The Subcommittee on Energy Regulation of the Senate Committee on Energy and Natural Resources held hearings April 23-24, 1981 on the Powerplant and Industrial Fuel Use Act.

9/ The Senate Committee on Energy and Natural Resources held hearings on November 5-6, 1981 which were limited to Implementation of Title I of the Natural Gas Policy Act.

10/ See attached Chart Seven entitled Maximum Lawful Prices Per MMBtu for Deliveries.

11/

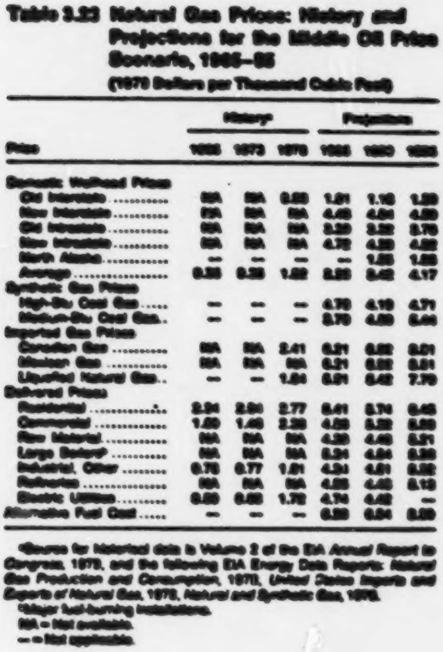


Table 3.23 Natural Gas Prices: History and Projections for the Middle Oil Price Scenario, 1965–95
(1979 Dollars per Thousand Cubic Feet)

	History^a			Projections		
Price	1965	1973	1978	1985	1990	1995
Domestic Wellhead Prices						
Old Interstate	NA	NA	[illegible]	1.01	1.10	[illegible]
New Interstate	NA	NA	NA	[illegible]	[illegible]	[illegible]
Old Intrastate	NA	NA	NA	[illegible]	[illegible]	[illegible]
New Intrastate	NA	NA	NA	4.72	[illegible]	[illegible]
North Alaska	—	—	—	—	[illegible]	[illegible]
Average	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.17
Synthetic Gas Prices						
High-Btu Coal Gas	—	—	—	[illegible]	4.19	4.71
Medium-Btu Coal Gas	—	—	—	[illegible]	[illegible]	[illegible]
Imported Gas Prices						
Canadian Gas	NA	NA	2.41	[illegible]	[illegible]	[illegible]
Mexican Gas	NA	NA	NA	[illegible]	[illegible]	[illegible]
Liquefied Natural Gas	—	—	1.84	[illegible]	[illegible]	7.70
Delivered Prices						
Residential	[illegible]	[illegible]	2.77	[illegible]	[illegible]	[illegible]
Commercial	[illegible]	1.46	[illegible]	[illegible]	[illegible]	[illegible]
Raw Material	NA	NA	NA	[illegible]	[illegible]	[illegible]
Large Boilers^b	NA	NA	NA	[illegible]	[illegible]	[illegible]
Industrial, Other	0.75	0.77	1.81	[illegible]	[illegible]	[illegible]
Refineries	NA	NA	NA	[illegible]	[illegible]	[illegible]
Electric Utilities	[illegible]	[illegible]	1.72	4.74	[illegible]	—
Alternative Fuel Cost	—	—	—	[illegible]	[illegible]	[illegible]

^a Source for historical data is Volume 2 of the EIA *Annual Report to Congress*, 1979, and the following EIA Energy Data Reports: *Natural Gas Production and Consumption*, 1979, *United States Imports and Exports of Natural Gas*, 1979, *Natural and Synthetic Gas*, 1979.
^b Major fuel-burning installations.
NA = Not available.
— = Not applicable.

EIA, 1980 Annual Report to Congress, Vol. III, at 90.

12/ The intrastate markets have experienced an average annual reserve decline of about 4% since 1976. In Louisiana, reserves committed to the intrastate market have declined by 13% annually since 1976 while interstate dedications declined by only 3% annually. EIA Monthly, supra note 4, at viii. See also EIA Current Market, supra note 7, at 9.

13/ DOE Study of Alternatives, supra note 2, at 10. See also Abbott, The Natural Gas Market in the Transition to Decontrol 14 (June 1980). (The percentages in the text assume about 6 tcf of natural gas in the intrastate market.)

14/ The nationwide impact of the petrochemical industry and balance of trade statistics can be found in the attached report, 1980 Petrochemical Industry Profile, prepared for the Petrochemical Energy Group by Arthur D. Little, Inc. at pages 34-38 and 24-28, respectively.

15/ Columbia Gas Transmission Corp., Docket Nos. TA 81-1-21-001, TA 81-2-21-001 (filed February 17, 1981 and August 19, 1981); Colorado Interstate Gas Co., Docket No. TA 81-1-32 (filed February 5, 1981); Michigan-Wisconsin Pipeline Co., Docket Nos. TA 81-2-48, TA 82-1-48 (filed April 22, 1981 and October 1981); Southern Natural Gas Co., Docket No. TA 81-2-7-000 (filed June 25, 1981); Transcontinental Gas Pipeline Corp., Docket Nos. TA 81-1-29-002, TA 81-2-29-001 (filed February 18, 1981 and August 19, 1981); and Northern Natural Gas Co., Docket No. TA 82-1-59 (filed October 1981).

16/ The EIA concluded that if all gas were deregulated in 1981 consumer prices would be 11% less than status quo projections in 1985. EIA, Analysis of Economic Effects of Accelerated Deregulation of Natural Gas Prices, at xvii (August 1981).

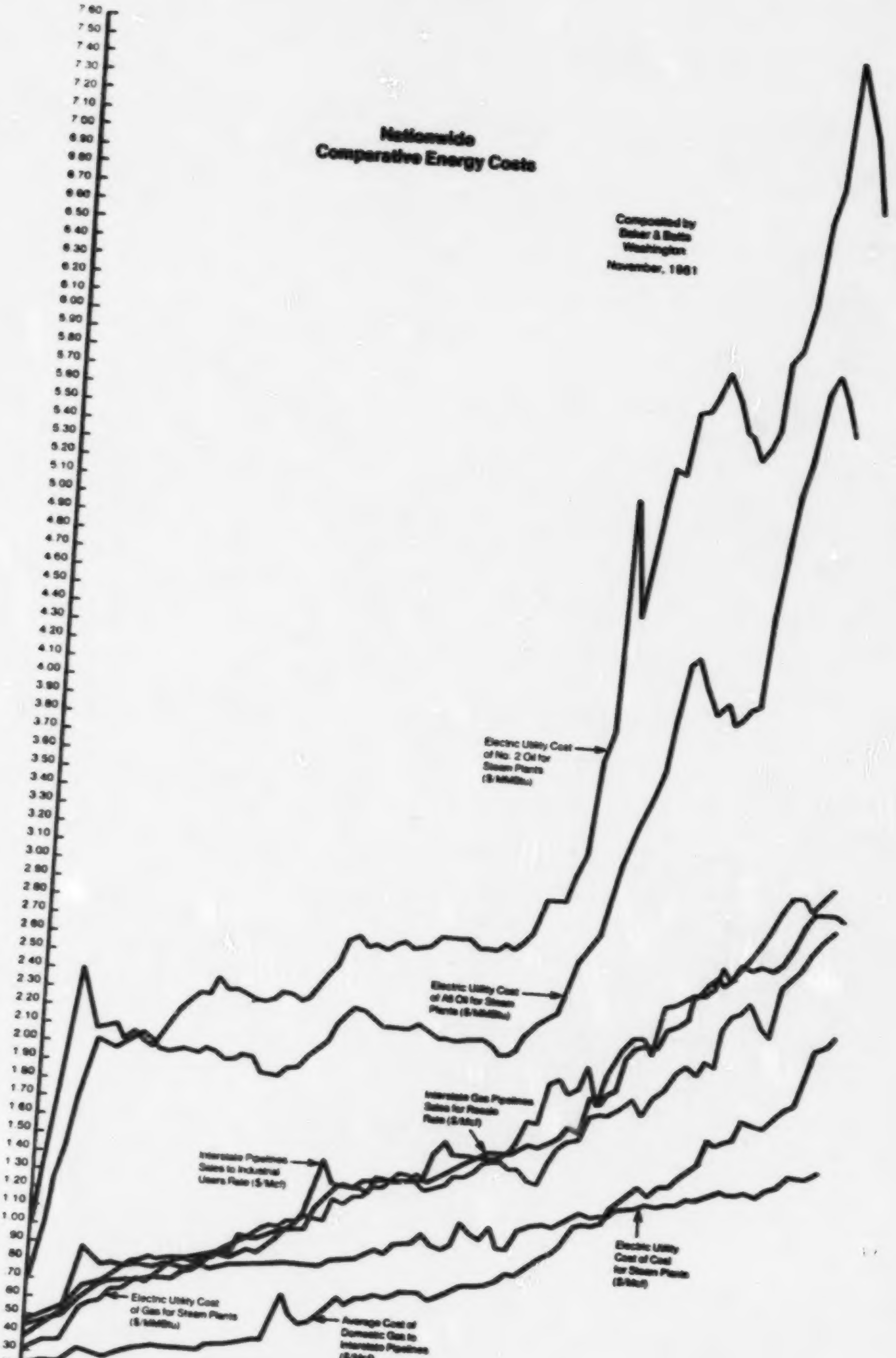
17/ Economic Report of the President, Transmitted to Congress February 1982 together with The Annual Report of the Council of Economic Advisors 160.

18/ DOE, Reducing U.S. Oil Vulnerability: Energy Policy for the 1980's, at 17 (November 10, 1980).

19/ NGPA § 313(a), 15 U.S.C. § 3373(a).

20/ NGPA § 203(a)(7), 15 U.S.C. 3343(a)(7).

Chart One


Nationwide
Comparative Energy Costs
Composited by
Baker & Botts
Washington
November, 1981
Electric Utility Cost of No. 2 Oil for Steam Plants ($/MMBtu)
Electric Utility Cost of All Oil for Steam Plants ($/MMBtu)
Interstate Gas Pipelines Sales for Resale Rate ($/Mcf)
Interstate Pipelines Sales to Industrial Users Rate ($/Mcf)
Electric Utility Cost of Coal for Steam Plants ($/Mcf)
Electric Utility Cost of Gas for Steam Plants ($/MMBtu)
Average Cost of Domestic Gas to Interstate Pipelines ($/Mcf)
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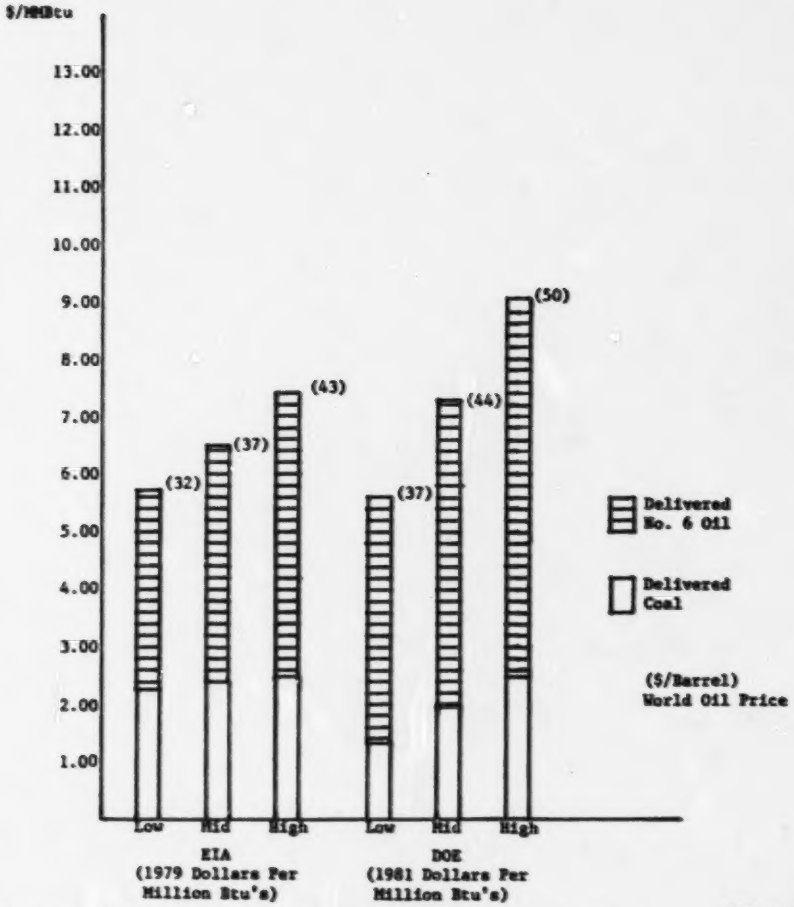
1981

February 1982

Chart Two

1985 Projected 6 Oil,
Coal and World Oil Prices



Sources: EIA Annual Report to Congress 1980, Vol. III, pp. 43 & 51
DOE Energy Projections to the Year 2000, July 1981, p. 3-3

Baker & Botts
Washington

Chart Three

UPDATED

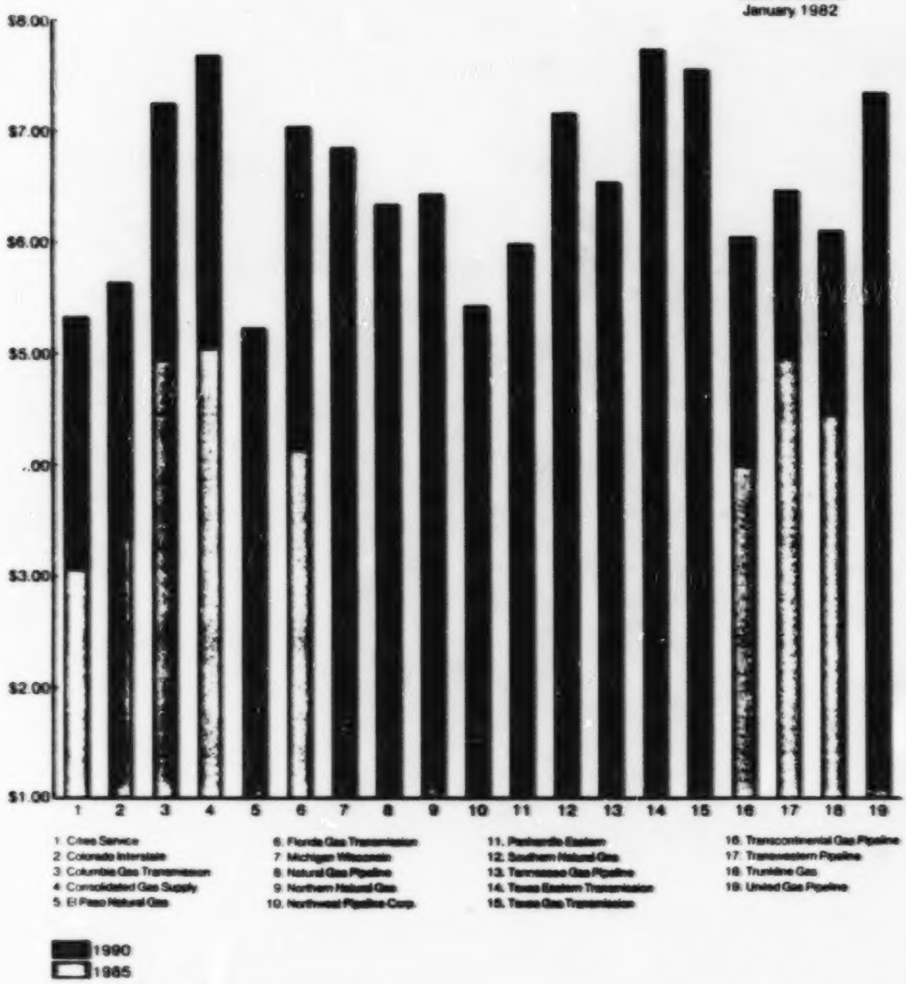
Comparison of Decontrolled and Rolled-In Gas Prices for 24 Interstate Pipelines 1985 and 1990 (1981 $/MMBtu)

	Base Case Prices					
	1985		1990		Ratio of Rolled-In to Decontrolled %	
Pipeline	Rolled-In (1)	Decontrolled (2)	Rolled-In (3)	Decontrolled (4)	'85 (5)	'90 (6)
Algonquin Gas Trans.	5.22	6.30	8.54	7.10	83.0%	120.0%
Cities Service	3.05	6.30	5.31	7.10	48.0	75.0
Colorado Interstate	3.36	6.30	5.61	7.10	53.0	79.0
Columbia Gas Trans.	4.93	6.30	7.26	7.10	78.0	102.0
Consolidated Gas Supply	5.05	6.30	7.68	7.10	80.0	108.0
El Paso Natural Gas	3.40	6.30	5.21	7.10	54.0	73.0
Florida Gas Trans.	4.13	6.30	7.02	7.10	66.0	99.0
Michigan Wisconsin	4.56	6.30	6.85	7.10	72.0	96.0
Western Gas Trans.	5.57	6.30	7.70	7.10	88.0	108.0
Mississippi River Trans.	5.59	6.30	7.46	7.10	89.0	105.0
Natural Gas Pipeline	4.26	6.30	6.33	7.10	68.0	89.0
Northern Natural Gas	4.15	6.30	6.44	7.10	66.0	91.0
Northwest Pipeline Corp.	4.50	6.30	5.41	7.10	71.0	76.0
Pacific Gas Trans.	5.75	6.30	7.41	7.10	91.0	104.0
Panhandle Eastern	4.00	6.30	5.98	7.10	63.0	84.0
Southern Natural Gas	4.92	6.30	7.17	7.10	78.0	101.0
Tennessee Gas Pipeline	4.21	6.30	6.52	7.10	67.0	92.0
Texas Eastern Trans.	4.06	6.30	7.73	7.10	64.0	109.0
Texas Gas Trans.	4.80	6.30	7.55	7.10	76.0	106.0
Transcontinental	4.00	6.30	6.05	7.10	63.0	85.0
Transwestern	4.98	6.30	6.46	7.10	79.0	91.0
Trunkline Gas	4.47	6.30	6.10	7.10	71.0	86.0
United Gas	5.36	6.30	7.35	7.10	85.0	104.0

Courtesy of Foster Associates, Inc. (1981 Study)

CHART FOUR

PROJECTED ROLLED - IN NATURAL GAS PRICES FOR MAJOR INTERSTATE PIPELINES (1981 $/MMBtu)



Baker and Botts
January 1982

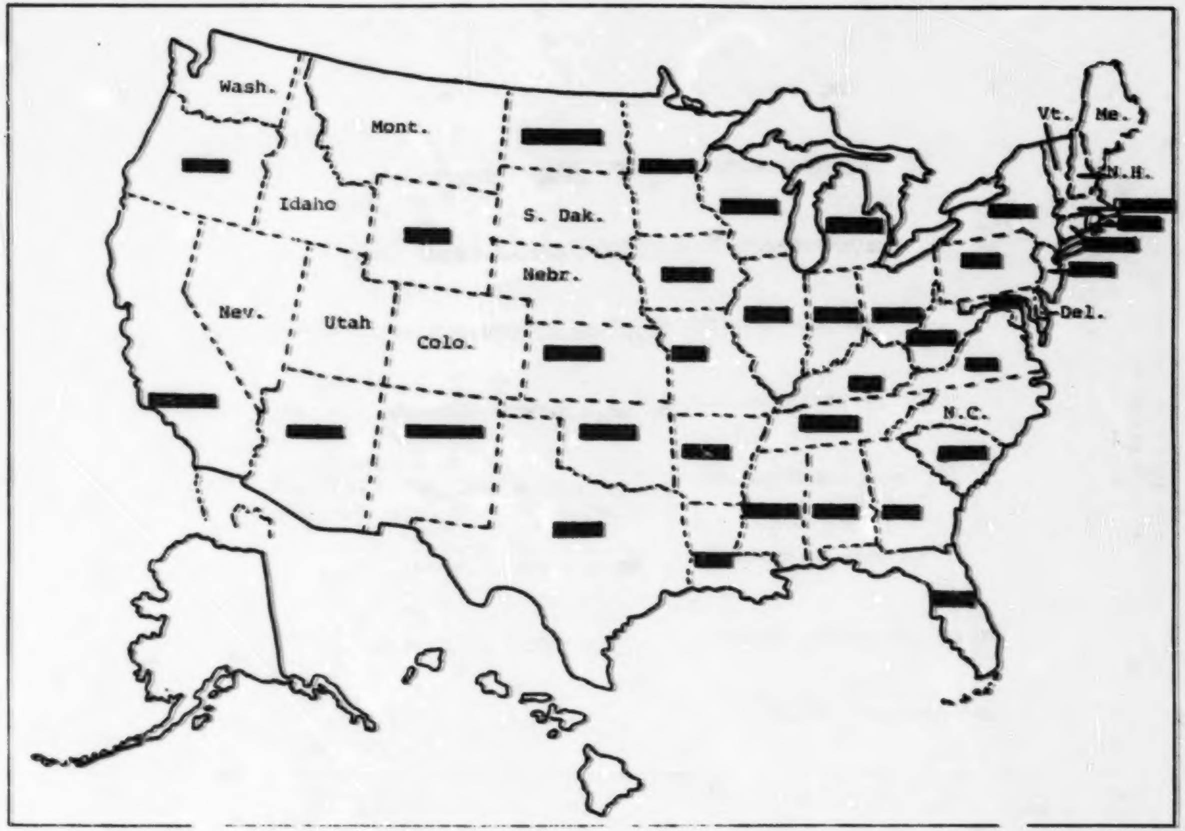
Courtesy: Foster Associates, Inc., 1981 Study

BEST DOCUMENT AVAILABLE

BEST DOCUMENT AVAILABLE

CHART FIVE

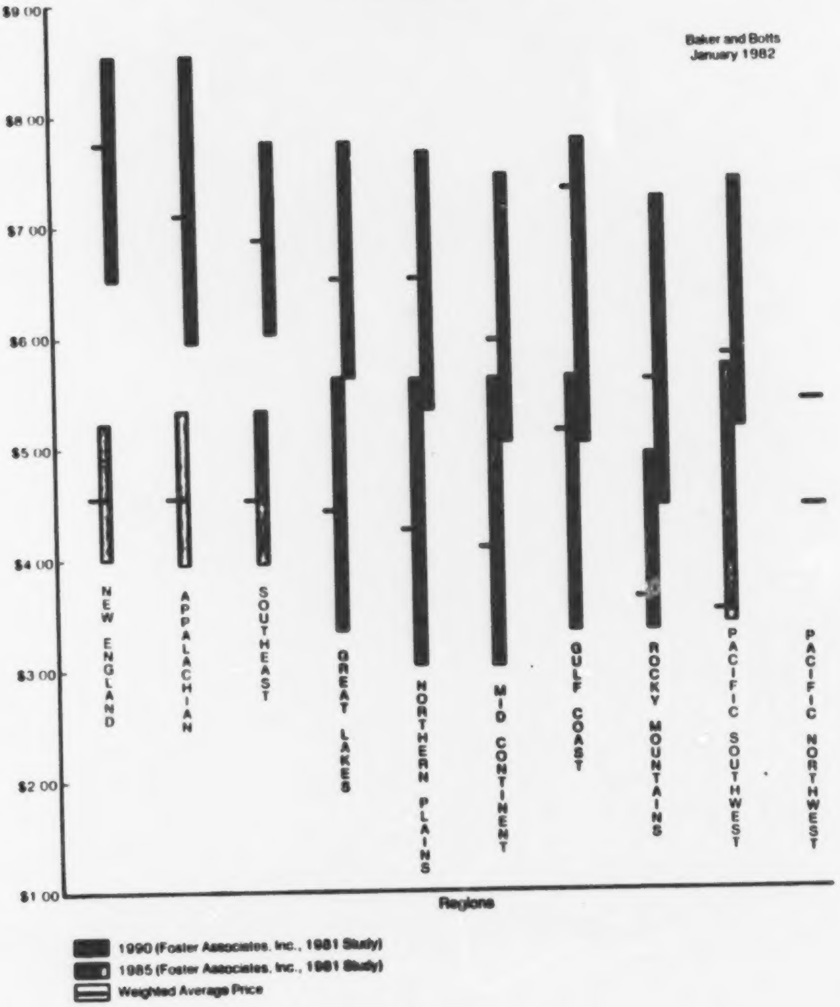
States Served by One or More Major Interstate Pipelines Projected by Foster Associates, Inc. to Have Greater Than Average Purchased Gas Cost in 1985


Wash.
Mont.
Idaho
S. Dak.
Nebr.
Nev.
Utah
Colo.
Vt.
Me.
N.H.
Del.
N.C.

Baker & Botts
January 1982

CHART SIX

RANGE OF GAS ACQUISITION PRICES OF 24 INTERSTATE PIPELINES 1985 AND 1990 BY GAS CONSUMPTION REGIONS (1981 $/MMBtu)



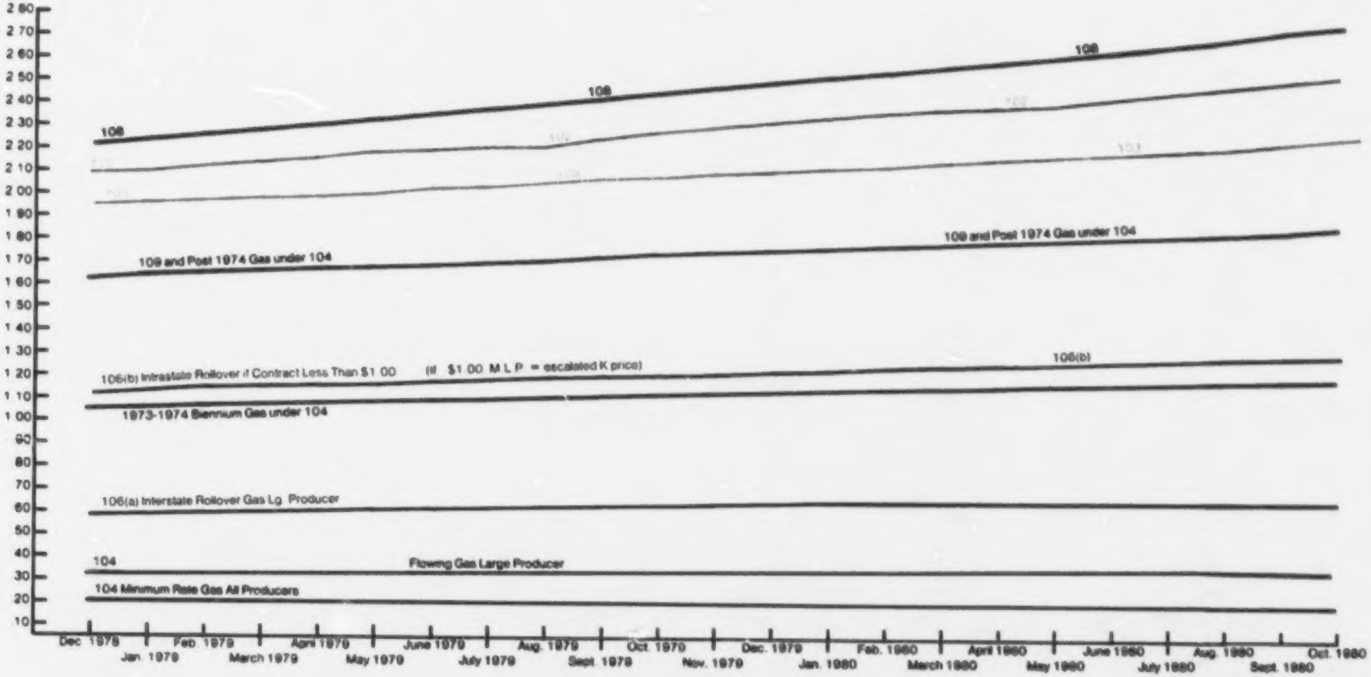
Baker and Botts
January 1982

Chart Seven

Maximum Lawful Price Per MMBtu for Deliveries
(Actual Dec. 1978 to April 1980)
in current dollars

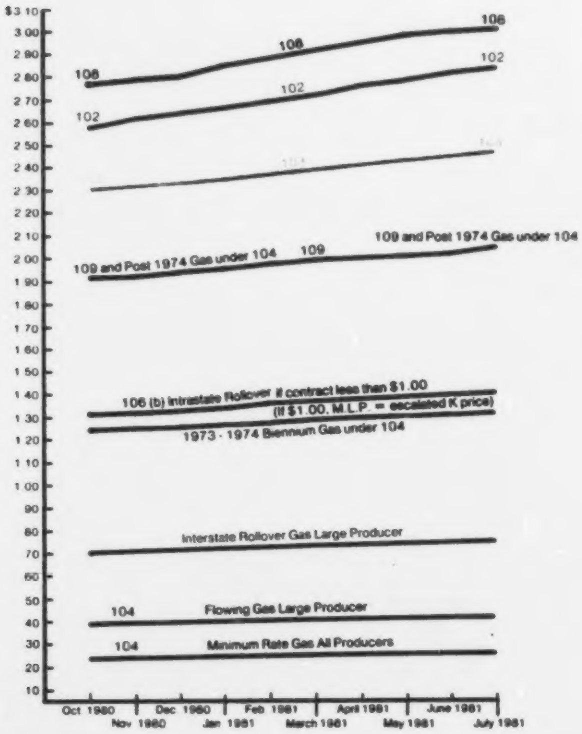
Composited by
Baker Botts
Washington

November, 1980



BEST DOCUMENT AVAILABLE

Maximum Lawful Price Per MMBtu for Deliveries
(Actual Oct. 1980 to July 1981)
In Current Dollars



Composited by
Baker Botts
Washington

June 1981

54

Representative RICHMOND. Thank you, Mr. Gooch.

Mr. Steimel.

STATEMENT OF EDWARD J. STEIMEL, PRESIDENT, LOUISIANA ASSOCIATION OF BUSINESS & INDUSTRY

Mr. STEIMEL. Thank you, Congressman.

I will start by saying I would concur almost completely in the approach to deregulation indicated by Mr. Butler.

Representative RICHMOND. As against Mr. Gooch's approach?

Mr. STEIMEL. And Mr. Gooch's approach, both of them.

Representative RICHMOND. Mr. Butler believes in a gradual phaseout of decontrol to 1985. Mr. Gooch seems to say that it ought to be decontrolled immediately.

Mr. GOOCH. No, sir.

Mr. STEIMEL. I believe he said 1985, too. At least I would say I do.

Representative RICHMOND. And Mr. Gooch does.

Mr. STEIMEL. We would approve of a phased decontrol from here until 1985. We recognize the distortions that would occur otherwise. There are going to be very serious disruptions if we do nothing in 1985.

Representative RICHMOND. What is your estimate of the price of gas in 1985 under decontrol?

Mr. STEIMEL. What do I think it would be?

Representative RICHMOND. Yes, as against oil.

Mr. STEIMEL. I don't consider myself qualified in that field. I am here more representing consumers than I am producers.

Representative RICHMOND. Well, since we are both interested in consumers, I am just wondering how much it is going to cost the consumers.

Mr. STEIMEL. I think that Mr. Butler is not far afield. I think we have already seen the softening of the price of oil. Unless there are major disruptions, I don't see any forces over the next 2 or 3 years that are going to shove those prices up. If there should be a phased decontrol of gas beginning now, phased up to 1985, I think it would set in motion additional production which would have a further impact on the price of oil and would help keep it down to that level.

Representative RICHMOND. Of course, you are not talking about deep production; you are talking about 10,000 feet, I assume.

Mr. STEIMEL. No, I am simply saying that if the controls were taken off or we saw that there was an end in 1985 to the controls on price, this would stimulate production beginning now, and as that production came on stream it would begin displacing oil, some of the imported oil from OPEC nations.

Representative RICHMOND. How much has the virtual decontrol of deep gas done in increasing supplies this last year?

Mr. STEIMEL. What has it done?

Representative RICHMOND. Yes. Deep gas is virtually decontrolled. Right?

Mr. STEIMEL. It is decontrolled.

Representative RICHMOND. All right. And 10,000 to 15,000 feet is also——

Mr. STEIMEL. No, it is not decontrolled.

Representative RICHMOND. No, but the price is 50 percent up.

Mr. STEIMEL. No, it is not. That is only a proposal of the FERC. That has not been implemented. And that's probably a year off, especially after it goes through the courts. It at least would be a year off, I would guess. So there is only one that is decontrolled, and that is the deep gas, which is about 3 percent of the gas.

Representative RICHMOND. And that apparently hasn't increased production too much.

Mr. STEIMEL. Oh, yes.

Representative RICHMOND. It has?

Mr. STEIMEL. The production in Louisiana has almost all flowed to the deep gas now. That's about all that's going on. And we can't buy any of it. That's part of what my concern is. I'm concerned for the consumer. I'm concerned for the producer, too, but my principal concern is for the consumer, and I would really like to discuss that primarily.

Representative RICHMOND. Go ahead.

Mr. STEIMEL. I would start by making the statement that the majority of the consumers of this country will be worse off in 1985 under the effects of the Natural Gas Policy Act of 1978 than they would be under natural gas deregulation.

I would like to explain what I mean. Half the consumers, in the first place, do not use gas to heat with. So whatever you do with gas is not going to affect their heating bill, except that it will be reduced perhaps if we decontrol it, because they are now paying high heating bills for oil, for coal, and for other sources of fuel, and if gas were deregulated, those prices would tend to stabilize or perhaps even go down. That's one group of consumers, only from the heating.

Now the second set of consumers happens to be all of them, you and I and every human being in this country, and they will soon be paying highly inflated prices for literally hundreds of consumer items, everything from food through clothing and shelter, because of the unforeseen and unplanned and unbelievable effects of the NGPA and other laws and regulations governing price and supply, and it affects particularly the chemical industry of Louisiana and Texas.

Here is how this happened. This fact flows from the reversal of this Nation's natural gas policy in 1978, which by that time had spawned a chemical industry in Louisiana and Texas, and it is big, it is highly concentrated, and it today produces between 50 and 95 percent of most of the basic chemicals that go into these hundreds of consumer products, everything from tires to plastics, the dashboards of every automobile, and so on. The consumer of this Nation cannot do without those products, nor can the manufacturing facilities of those two States be replaced or duplicated anywhere in this country short of 10 years, if we could even find the money to do it. Now it's there. The country needs that product.

The price of gas for those manufacturers is going to be enormously higher under the NGPA than it will be under deregulation. The reverse of what everybody is thinking, the price is going to be higher under NGPA in 1985, not before, but in 1985 and thereafter, than it would be under deregulation of natural gas as of 1985.

The reason for that is this tremendous amount of gas that will still be regulated, and at a very low price of one-third to one-half of market, which is not available to these industries in Louisiana, totally unavailable to them, but will be bought then by those who have that low gas, with 50 or 60 percent of an interstate pipeline's gas, costing them one-third market price or one-half market price, they will be able to bid all of the new gas that comes on stream after January 1, 1985, to whatever levels it takes to get it. It makes no difference what that level is, because they can work it back in and the people of Louisiana, and let's say the industries of Louisiana that make the fertilizers for the farming community of this country, that make the plastic, the pharmaceuticals, and so on, will have to pay whatever it takes to get that or make conversions, if they can. They can't convert the feedstock because ammonia has to come from gas. All of the feedstocks really having to come from the gas. They can't make that conversion. The only thing they can convert is the energy source, and some of them can't do that. Conversion to coal is not something that can be done in a short period of time. It's a 3- to 5-year minimum conversion.

Again, where do you find the money?

So it simply can't be done. So they are going to have to pay these inflated prices for the gas, if they do it at all.

The alternative is to go to foreign markets for the fertilizer. Right now the two principal suppliers of ammonia fertilizer are Russia and Mexico. And I don't believe the farmers of this country really want to get dependent upon that source.

Those are the basic problems. We've got a chemical manufacturing industry in the two States of Louisiana and Texas that have been built out of the free market, because we did have access to supply and could pay whatever we wanted, and we paid a higher price in Louisiana for this gas than the interstate market all through these years. Seventy-eight came and reversed it. Suddenly the supply is cut off, and now the only supply we can buy is this cheap deregulated gas, and we can't afford it. So it's flowing out and our supply is going this way.

The only reason right now that we are able to get it is because the Nation is in a very deep recession. Therefore, there is a surplus and we are able to, through some loopholes in the NGPA, get some of the gas and bring it back in. We actually are operating in a shortage in Louisiana today. The No. 1 gas producing State in the country is having to import 10 percent of its gas at the present time. It has been as high as 20 percent in the last 6 months. It will go to probably 35 percent in the fall of 1982 or the spring of 1983. Then we'll be deficient and have to import. By that time we'll be in curtailment.

These are some of the problems that the NGPA has wreaked upon this State. And it isn't just what's happening to the State; it's what's happening to the source of hundreds of consumer products, and therefore to the price of those products.

Now if deregulation occurred, these are some of the benefits that we believe will flow from it. Looking at what Professor Erickson has said and Professor Lowery has said, they estimate that perhaps as much as 1 million barrels of oil can be displaced because of the increased production by 1985, and another 500,000 barrels of oil resulting from conservation.

Professor Lowery estimates that that might go as high as 2.8 million barrels of oil a day in 5 years. If that's true, that would mean that $40 to $50 billion worth of oil being bought from the OPEC nations would not have to be bought. That money would stay here. It would certainly do an awful lot for the balance-of-payments deficit in this country. That money would stay here, go into the economy, would be infused into additional production and whatever. It would be a spur to the economy, increase jobs, we would hope, certainly. They can't eat the money. They have to do something with it.

Heating oil would benefit from it. Because of the decreased demand for foreign oil we would have the same thing that we already are seeing. Because of oil deregulation there is a decreased demand for OPEC oil. That's what's brought the price down. It would be a further depression on the price. That would work itself into a lower cost for the heating oil for that great number of consumers in this country who are having to use heating oil for heating their home. So they would have a direct benefit from the deregulation of gas.

The discrimination that we have, that we are continuing and perpetuating forever in this country between coal heaters, those who heat with oil, those who heat with interstate gas, or with an interstate system that has a lot of the cheap gas and some that have the high, or intrastate gas, or electricity—we got horrible discrimination among consumers in this country today—would end at least substantially if we had deregulation, because we are subsidizing some at the expense of the others. It's just that simple. Consumers ultimately pay for it all.

Now which consumers are paying for it? There would be a flow of money, no question about that, under deregulation. Some of it would flow from consumers to producers. We acknowledge that. Where is it flowing from now? It is flowing to the Arab nations. Is that really what we want?

So our approach here is to try to keep it in this country. Hopefully it will do something for the economy.

One other little thing. It seems this country is in a little bit of a problem in balancing its budget. I hear a good deal of talk about that. If that is true, and if a windfall profits tax were to accompany this, and I have not heard any responsible person who believes that a windfall profits tax would not accompany it in some way at some point in the legislation process, and if it would produce $30 billion, which I think is the estimate that we are hearing, it seems to me that may be the biggest way to find a large chunk of money to close that horrible gap that we now see.

And what would it do to the Nation? Would it hurt the economy? No, it would spur production. It would keep that flow of $50 billion away from the OPEC nations and keep it here. It would create some jobs. It would bring equity. I can't see what it would do to harm anyone. And it would help the President.

Representative **Richmond**. In other words, you are saying that a windfall profits tax would yield $30 billion to the Treasury?

Mr. **Steimel**. $30 billion over a 3-year period.

Representative **Richmond**. $10 billion a year to the Treasury. And it wouldn't in any way affect the producers? It would spur production?

Mr. **Steimel**. Sure it would spur production, because that wouldn't be all of the income that would be received from the production. It would be an enormous amount beyond that. So it would be profitable.

Besides, I think it would probably be a short-term windfall profits tax, something that would phase out ultimately, and I think if people could see the end to this monster that has been created over the past 28 years that there would be the freedom to move into it.

We have seen what's happened in oil production, 35, 38, 39 percent increase in production in 1980. The same thing in 1981. But in gas there is no increase in production. And the only place that now the production dollar is going, the drilling dollar is going, is to the deep gas where they can get ten bucks a thousand cubic feet. They won't stop at 14,000 feet and sell it for $3. Go another thousand and sell it for $10.

That's what's happening. Because of the rules made by the NGPA we have such a horrible skewing of the whole operation, supply, distribution of gas, and the use of it. We need to bring an end to it. We must recognize that the Government can't do this as well as the free economy can.

[The prepared statement of Mr. Steimel follows:]

PREPARED STATEMENT OF EDWARD J. STEIMEL

I am here representing the largest group of economic leaders in Louisiana, the state which is both number one in natural gas production and number two in natural gas consumption. The interests I represent include virtually every major producer, as well as scores of independent producers, every major consumer, every interstate pipeline, every intrastate pipeline and every electric utility operating in Louisiana. All have a vital stake in the outcome of natural gas deregulation, but the major consumers face an impending crisis of price and supply under present regulations and must have relief or the nation will suffer major increases in the prices of hundreds of consumer items made from natural gas in the concentrated chemical industry in Louisiana and Texas.

My purpose today is to review some of the terrible economic distortions and market disorders brought about by 28 years of governmental intervention in the marketing of natural gas, show their effect, list some of the benefits and costs to consumers and the nation of throwing off this yoke, and suggest an approach we believe must be taken in the national interest.

Natural gas first came under the guiding hand of the government with passage of the Natural Gas Act of 1938 which set up a mechanism for regulating the interstate pipelines in hauling gas from the producing states to consumers all over the nation.

This caused no serious problem, until 1954 when the U. S. Supreme Court decided in the Phillips case to impose price controls on sales by producers of natural gas in interstate commerce. Ever since, interstate natural gas has been sold at a fraction of the price of alternative fuels in virtually all its markets. The result was excessive demand, wasteful end use and a decline in exploration for and production of natural gas.

Surely, Congress never intended to regulate natural gas prices, and they remained unregulated for 16 years. In 1956, Congress passed a law reversing the Phillips decision only to have the law vetoed by President Eisenhower when there was an accusation of a payoff on the legislation. America has suffered enormously ever since.

Two other critical acts, the Natural Gas Policy Act and the Fuel Use Act, passed by Congress in 1978, have, in retrospect, compounded the pricing error in the Phillips case and distorted the market by denying access to supplies to certain users, by setting priorities for all use, by setting nine different categories of gas of equal value (but all with widely varying prices), and further by setting subcategories of prices that add more than 20 price levels within the nine categories of gas. Remember this is gas of equal value. This is the monster we seek to bring down. It has grown into a regulator's dream, but a national nightmare.

Severe shortages developed in interstate markets in the early 1970s, contributing substantially to a reduction in industrial output and unemployment, and eventually to severe inflationary pressures and a decline in national productivity. Meanwhile, the intrastate market--serving the industrial economies of major producing states--which thus far remained unregulated with gas selling at competitive prices, was adequately supplied and even produced a surplus of gas.

President Carter, who campaigned on a platform of natural gas price deregulation, instead reneged on his promise and chose to extend federal regulations to the intrastate market, the only segment of the gas market that was thriving because it was the only segment that was operating in a somewhat free market. Now both interstate and intrastate markets are regulated as to price, supply and use. There is no way even to list the disorders and the cost to the economy, for they are endless. I shall, however, review some of the obvious problems that have resulted from these years of regulation of such an important aspect of our economy.

The importance of all this is seen in the fact that natural gas constitutes over one third of all domestic energy produced in the U. S. and accounts for one fourth of all energy consumed in the U. S.

Regulatory Ills

--Today, natural gas of identical value sells for an average of about $2.75 per MCF for those categories of gas classified as "new" gas, about $1.50 per MCF for "old" gas, as high as $10 per MCF for decontrolled gas, while Canadian and Mexican gas imports are selling at $5.00 per MCF. Actual prices range from about 7¢ to $10 per MCF. Remember, this is gas of equal value.

--Consumers who happen to be served by one interstate pipeline fortunate enough to have a large quantity of low-cost gas pay far less for their energy than other consumers served by another interstate pipeline.

--But half of all consumers are served by neither, since they heat their homes with coal or fuel oil at prices far above the subsidized price-controlled gas. Thus, the discrimination among residents throughout the nation resulting from federal regulation of natural gas prices goes on and on.

--Louisiana, the number one natural gas-producing state, finds itself with an approximate 10 to 20 percent shortage of gas from traditional sources for its own consumption needs amidst a large surplus of gas nationwide. The shortage would be greater except that the Louisiana chemical industry is operating at about 60 percent of capacity at present. More than 80 percent of Louisiana's gas is shipped out of state under federal regulation, even though Louisiana's economy was built on its indigenous fuel and now faces economic disaster under present law. To operate much of its industry, Louisiana in 1980 began to "import" gas it had earlier produced but had been required by federal law to export. When the national surplus diminishes, such imports will be the first to be curtailed. So, Louisiana--the number one producing state--can expect curtailments as early as mid-1983 when the national surplus is expected to play out. Next will be Texas, the number two producing state. Together, these two states produce nearly 70 percent of the nation's gas. But present law is forcing a shortage, which prompts abnormally high prices in those two states but not in others.

--To offset these curtailments consumers in the major producing states will have no alternative other than to try to purchase the only available gas on the market which will largely be "deep" unregulated gas now selling as high as $10 per MCF. This situation will worsen each year under present law until 1985 when virtually all gas available will sell for market price plus a premium on new gas that will be induced by the "cushion" of low-priced gas largely held by interstate pipelines which will permit those pipelines to bid up the "new" gas to inflated levels. This bidding up of the price of new gas will be possible because about 40 percent of the interstate gas will remain regulated indefinitely under present law at a price less than half the market price. Thus, chemical manufacturers in the two major producing states of Texas and Louisiana that produce in many instances over half of the primary chemicals produced in America will be faced with an estimated cost of natural gas as much as 40 percent higher under present law than under total deregulation. This higher cost of producing chemical products will be reflected in increased prices of hundreds of consumer products which are made from basic chemicals--suits, dresses, plastics, cars, tires, paints, fertilizers, etc.

--Indeed, this shortage of gas from traditional sources in Louisiana has already made many Louisiana chemical plants marginally competitive. Thus, in the soft chemical market today, some 14 chemical, aluminum and other major industrial plants in Louisiana have already announced closures or curtailed operations, with the subsequent layoffs affecting over 4,600 workers and more layoffs being announced weekly. A list of plants and the number of workers laid off so far includes:

Company	Number of workers
Kaiser Aluminum Corporation	789
BASF Wyandotte	380
Allemania	100
Consolidated Aluminum	543
Copolymer	100
Hooker	15
Dow	650
CosMar	25
Boise Southern	350
U. S. S. Chemicals	131
Ormet	69
Cities Service	950
International Paper	180
Formosa Plastics	390

--When chemical production resumes normal operation, hopefully later in 1982, Louisiana's gas shortage will escalate to about 35 percent in 1983 and as much as 50 percent in 1984. Such shortages will force further closures or the purchase of the highest priced gas for feedstock and fuel, resulting in serious inflation in the price of consumer products made from chemicals manufactured in Louisiana and Texas.

--One of the hardest hit consumer groups will be the American farmers who use huge amounts of nitrogenous-based fertilizer, 60 percent of which is produced in the major gas-producing states. Because of the premium price such manufacturers will have to pay for natural gas under present law, the production cost per ton of anhydrous ammonia (basic building block in nitrogenous-based fertilizer) will increase to an estimated $269 by 1986 under present law as compared to $202 under deregulation. In Louisiana alone, which produces one third of the nation's supply of anhydrous ammonia, this will amount to an added cost to farmers of $426 million a year unless deregulation occurs.

--One alternative would be to import more ammonia from Russia or Mexico, the two largest suppliers of the 10 percent of ammonia now imported by the United States. But do the farmers want to become more dependent on such insecure sources for such an essential product? Such dependence is what we are seeking to avoid in the case of OPEC oil.

--Farmers will either have to pay the price, become more dependent on Russia or Mexico, or reduce fertilizer use and increase acreage under production. The latter alternative will exacerbate another serious problem already facing the American farmer--soil erosion.

--The American farmer will also be hit by higher costs of herbicides and insecticides produced from the higher-priced gas in these same gas-producing states.

--Farmers, especially in the South and Southwest, will pay a premium for gas under present law for on-farm use of gas for irrigation pumping, crop drying and processing and for electricity, much of which is generated from natural gas.

--Agricultural industries will also be affected since natural gas plays a large role in natural fiber production and processing, food processing and food quality maintenance.

--In short, much of the agricultural lifeline on which this nation depends, both for its domestic food supply and to support its balance of payments, will be affected far more adversely by price and supply disruptions under present law than under deregulation.

--These costs will either be reflected in consumer food prices or absorbed by American farmers who have run out of room to absorb any added costs.

--Similar costs can be expected to be reflected in the hundreds of products made from the other chemicals produced in the major gas-producing states. An indication of that impact can be seen from the following listing of major chemicals wherein the majority of total United States production is in Louisiana and Texas alone. Scores of other primary and intermediate chemicals in large quantities are, of course, produced in these same states which produce 70 percent of all natural gas in America.

CHEMICAL	PERCENTAGE OF PRODUCTION IN LOUISIANA & TEXAS (1980)
Ethylene	90%
Chlorine	59%
Propylene	81%
Benzene	64%
Toulene	52%
Methanol	97%
Vinyl Chloride	88%
Styrene	93%
Caustic soda	59%
Diethylene Glycol	84%
Ethylene Oxide	85%
Ethylene Glycol	84%

--Meanwhile, the coal industry, which once thrived and carried the heaviest energy load in this nation, has been further debilitated by federal pricing of gas at such low levels that coal could not compete.

--The pricing scheme under present law has diminished incentives to produce the lowest cost gas and reduced pipeline firms' incentives to seek the lowest cost supplies. As a result, gas is selling below replacement costs and below competitive fuel prices.

--A major defect in the Natural Gas Policy Act (NGPA) is its scheme of partial deregulation. One category of "new" gas--that drilled at depths of 15,000 feet or more--was deregulated. But rather than sell at market levels (about $4.50 per MCF) it sells as high as $10 per MCF because the amount is limited and its purchasers are largely those that have large volumes of federally mandated low-cost gas in their systems. Through the use of this low-cost "cushion," they can buy up this "deep" gas to assure a future supply and pass through the full price to their customers. When deregulation comes, this $10 price will drop to market levels.

--In Louisiana the majority of all new gas now being produced and offered for sale for the first time is Section 107 gas (over 15,000 feet in depth)--a perfectly natural response by enterprising producers who would rather sell gas at $10 per MCF than $3. It costs more to produce this gas than shallow gas but why stop at 13,000 or 14,000 feet where the government limits the price, when drilling a few more feet gives the producer a free hand on price? And, because of the limited supply of this gas and the regulated "cushion," the price is double market levels. Because of this lack of a regulated low-cost cushion equal to that afforded their interstate counterparts, this gas cannot be afforded by intrastate industry, for the purchase of it would raise the cost of products and operations to non-competitive levels. Thus, all this gas goes into the subsidized interstate market, which has a surplus already.

--One of the most serious flaws locked into the NGPA passed in 1978 is that the pricing schedules for all categories of gas were based upon a forecast that world oil prices would reach $15 per barrel in 1985. Within two years after passage, oil prices had more than doubled the 1985 projection; yet gas prices remain tied to the obviously obsolete base.

--Now, with oil price deregulation, combined with total interstate and intrastate gas regulation, the price differential between oil and gas widens. This has brought about a major shift in exploration away from gas to oil. In 1981, gas drilling remained relatively stagnant. In contrast, oil drilling increased 39 percent in 1980 over the previous year and continued at a higher level in 1981. And a 10-year decline in oil production was reversed as a result.

--Price controls held to such a low level on one third of domestic energy production have resulted in a substantial long-term increase in foreign oil purchases and a propping up of the price of OPEC oil.

--The loss to the economy by failure to invest in gas exploration is enormous and every day delays the nation's solving its serious problem of heavy dependence on OPEC nations for huge quantities of oil.

Benefits of Deregulation

What are the major benefits that can accrue from gas deregulation?

--Recognized economists who have studied this issue generally agree that phased decontrol of all natural gas prices would stimulate production by 1985 to a level that would equal one million barrels a day of oil and another 500,000 barrels a day due to conservation induced by the higher prices. This could escalate over a five-year period to a level of 2.8 million barrels a day displacement in oil imports, according to Professor Glenn Loury of the University of Michigan. At $40 per barrel of oil, this amounts to about $50 billion per year in reduced transfers to OPEC and represents major savings to our national economy.

--Conservation resulting from the competitive prices for gas are estimated by various economists to run from 500,000 to 700,000 barrels per day equivalence with a savings of $7 to $10 billion annually to our nation's economy.

--This reduction in oil imports by the free world's largest importer of OPEC oil is estimated to produce a downward pressure on OPEC prices, due to decreased demand, valued at $10 billion a year. This, of course, would accrue to the benefit of home heating oil consumers as well as other users of oil and oil products.

--Besides the direct and major reduction in our international payments deficit, there is the reduced dependence on insecure foreign supplies.

--The efficiency of natural gas production will be increased because the premium now being paid for unregulated "deep" gas (the most expensive to produce) will be removed as all gas will be priced at market levels.

--The discrimination among consumers of coal, fuel oil, low-cost gas and high-cost gas would end with deregulation of natural gas prices.

--The national economy, besides the benefits resulting from backing out oil imports, would be improved by the capital investment and employment required for expanded exploration and production.

--The enormous investment in those major producing states that developed intrastate pipeline systems and a petrochemical-based economy will be preserved and will not have to be replaced.

--Deregulation would permit wholesalers and retailers of heating oil and producers of coal to compete equally in the energy market.

--Depending on the nature of the tax, deregulation will probably produce $20 to $30 billion in a short-lived windfall profits tax (no doubt called by another name) that will help balance the federal budget while leaving enough incentive to expand production as happened in the case of oil price deregulation.

Costs of Deregulation

Natural gas deregulation will bring certain costs to the economy and to individuals:

--Residential prices would range from 12 percent to 16 percent higher over the next three years resulting in each household paying an estimated $100 to $150 more per year until 1985 and much less thereafter.

--There would be a transfer of about $12 billion a year from 1982-1985 from consumers to producers and royalty owners, but it should be remembered that the recipients are U. S. citizens who reinvest those dollars to create more jobs and production in the U. S., rather than OPEC nations to whom the transfer of wealth currently goes.

--Inflation is estimated to rise by less than 0.6 percent in the year of greatest effect and dwindle to a negligible amount in three or four years. This increase in the consumer price index averaging about 0.3 percent a year over the years 1982-1985 is less than the estimated boost in real gross national product of 0.5 percent a year.

The Solution

We recommend phased decontrol of all natural gas prices between now and January 1, 1985 to market levels of competing fuels. This must be accompanied by removal of all legislative and regulatory barriers to accessibility of natural gas by all purchasers. Our preference is to bring all regulated categories to a single price immediately and then phase up to market level on January 1, 1985, to minimize disruptions that could be caused by a sudden and drastic increase in prices that would result from immediate decontrol. We also recommend repeal of incremental pricing and repeal of the Fuel Use Act which prioritizes gas uses, upon completion of the phased deregulation, for the market is the best determiner of use. These, and some other fine tuning parts of our recommendation, must all be parts of one package that dismantles the maze of regulations of price, supply and use altogether. One without the others results in discrimination and continued regulation.

Summary

From what I have presented, here are some of the facts that emerge that should help us in selling this issue to the people and to Congress:

--The American farmer is going to be further crippled if deregulation is not passed, because present law will make the cost of his fertilizer, insecticides and herbicides higher because they are largely produced in states where gas prices will escalate further under present law.

--Higher costs to the farmer translates into higher food costs for all consumers.

--The same escalation in prices of the hundreds of consumer products--Saran Wrap, antifreeze, polyester clothing, plastics, cars, tires, etc.--will occur because the majority of the chemicals from which these products come are made in Louisiana and Texas where gas prices will escalate more under present law than under deregulation.

--Half of the consumers don't use gas to heat their homes. For them, deregulation is an immediate plus, for their food, home heating oil bills, and other consumer products will be higher under present law.

--For the half who use gas to heat with, it can be shown that their heating bills will rise with or without deregulation, but the rise will range from $100 to $150 over the next two years and diminish thereafter. That's what it costs for a modest night out to dinner for two or three couples. An offset for these persons is that their food bills and the cost of other consumer products made from chemicals produced in the major gas-producing states will be lower under deregulation than under present law.

--Then there are the other arguments--secondary to the average person because they appear to affect him less directly--such as (1) keeping the $40 to $60 billion in Ameirca instead of sending it to the OPEC nations for oil, (2) becoming more energy independent, (3) putting a lot of people to work in increased exploration and production, (4) boosting the economy of America, (5) helping balance the federal budget, (6) being more secure in our energy supply, (7) conservation, (8) a downward pressure on oil import prices, (9) non-discrimination among those who heat with coal, fuel oil, wood, low-cost gas and high-cost gas, and, of course, (10) the real reason--letting the free market determine price, supply and use of gas. It is the best way, but unfortunately not enough people put a high priority on that reason for deregulation or we wouldn't have suffered through 28 years of government regulation of natural gas.

Twenty-eight years of governmental regulation of price, supply and use of one third of our nation's domestic energy production, while leaving unregulated the other two thirds has produced major economic distortions, dislocations and disorders that are obvious and undoubtedly even more that are less obvious. They have been and are today very costly to our nation's economy and have been a major obstacle to our nation's developing a sound energy policy and in moving rapidly toward energy independence.

There is no real shortage of energy in the world or in the nation if free market forces are permitted to work. Coal and nuclear power, if freed of political intervention, could alone meet the nation's energy needs for hundreds of years without injury to the environment. Yet, these two sources combined account for less than natural gas which has been hobbled by political regulations from maximum development. Political intervention currently is forcing a horrible waste of energy through transportation of coal and gas thousands of miles, while denying the economies of the producing states the right to use their indigenous energy. If political decisions can produce such misallocations of resources and prevent sound energy decisions and the development of sound energy policies, then political decisions to undo the mistakes of the past can reverse the trend. To these later political decisions we are committed.

Representative RICHMOND. Thank you, Mr. Steimel. Mr. Wilson.

STATEMENT OF DAVID W. WILSON, PRESIDENT, ASSOCIATION FOR EQUAL ACCESS TO NATURAL GAS MARKETS AND SUPPLIES

Mr. WILSON. Thank you, sir.

I am David W. Wilson, vice president of Consolidated Oil & Gas from Denver, Colo., which is a domestic independent. I am appearing here today in my capacity as president of a group called the Association for Equal Access to Natural Gas Markets and Supplies, which we have shortened to NGEA, or Natural Gas Equal Access.

This group, which consists at the current time of independent producers, was formed because we believe that the gas industry structure under which we now operate was developed when natural gas was an unwanted byproduct of crude oil. We believe that this system is not serving currently either the consumers nor the producers of natural gas.

I would like to give a few facts about the gas business.

Natural gas is the only commodity in our entire economy that producers are required to sell to the shippers by Federal rules. Natural gas is the only commodity in our economy that end users or local distribution companies can't buy directly from the producers and get shipped. They can buy gas directly from producers. They have no wedge. They have no way to force transportation of that gas to their facilities.

Gas, like I said, is a commodity that is forced to operate within a marketing infrastructure that was designed decades ago when, as I mentioned, gas was a nuisance and not the commodity that it should be in our energy picture for the remainder of the 1900's.

That structure puts between the users of the commodity and the producers of the commodity a monopoly. The current system is causing and has caused many, many problems.

Many of the speakers today have talked about regional differences in supplies, where you have oversupplies in one area, gluts and shortages, depending upon what mode of operation Congress happens to put us under from time to time. We have huge differences, regional differences in prices.

The current system provides incentives for high-cost gas, not only to receive the prices that we are talking about, but for it on a quantity basis to be taken in strong preference over lower price gas that is certainly available to the consumer, even under the Natural Gas Policy Act. This hurts producers who can't sell the lower price gas on a given transmission system, and it certainly harms consumers, because they are paying a higher price for gas than is really necessary at that time.

The current system also allows pipelines to compete on an unfair basis, through their production affiliates, with independent producers in a given area.

They have the right under Federal law to pay their own production affiliates the highest price they are paying any other single producer. They have no obligation to other producers on that system producing the same type of gas to pay that higher price also. So you now have instances where they are paying their affiliates higher prices than what they are paying the typical producer for exactly the same type of gas out of the same area.

There are no laws. There are no incentives under the current gas system to protect producers, to give them equal takes or equal access to the transmission system.

Producers in most areas have very little if any bargaining leverage. Consequently, it is the norm in the oil and gas business when you find new gas to get take-it-or-leave-it type contracts.

This is particularly a problem for smaller producers, because when you go to the transmission companies under the existing system and you request contract amendments to be able to go drill additional infield wells or tight formation wells, the question always comes back, what can you offer in some other area? If you're small you have very little to offer.

The industrial base of the United States does not have access to gas in all areas of the United States, which we feel they should have.

The system as it is now structured causes industries and jobs to move, which is an awful lot more expensive than being able to move the gas, which is very cheap to move.

What is the solution? Among other things that have been discussed today, we feel one very strong part that will have to be part of any solution to the natural gas business is for the pipelines between the consumers and the producers to be classified as common carriers.

I would like to point out transmission companies today have all of the rights of common carriers. Our group feels very strongly that they should have the corresponding obligations, and that is to ship gas for anyone that buys it on a tariff basis. This would allow distribution companies, end users, and other pipelines to negotiate in any area with producers for natural gas to get it shipped to their own system.

If you will recall, during the 1977 shortages many States went on self-help programs. The State of Ohio, the State of California. They went to the producers in the producing areas and actually were able to buy natural gas, gas that producers were willing to sell at prices they were willing to pay. They were not able to get that gas shipped to where they needed it in their States. The transmission companies have government power to refuse to ship natural gas for a third party.

Common carrier would result in a national market for gas, as with all other commodities in our economy. Natural gas is the only commodity that does not have a national market, and that includes crude oil.

I would point out there was not a national market in crude oil until the trusts were broken up, at which time in the early 1900's all crude oil pipelines, or most crude oil pipelines, became and were classified as common carriers. Crude oil sells for the same price in Montana that it does in Louisiana. The pipeline company in a particular area knows that they might as well offer you the market price for crude oil, because if they don't a third party could come in and buy it, get access to the line to get it shipped to their facility.

Another advantage of common carrier is that once it was phased in high-cost gas would have to find its own markets. If no distribution company, industrial user, or other end user, or other pipeline were willing to pay the price for high-cost gas, deep gas, its price would drop.

We feel that long term this would go much farther down the road toward solving the market disordering problem than any device that can be devised by man.

The distribution companies under common carrier, or industrial users, would have the flexibility, if approved by their public service commissions. If they think the oil and gas business is so profitable on the exploration and production side, there are no barriers to their entry. They can go into that business. They can enter into joint ventures. They can attempt to buy gas directly from producers on prices that they control, that they have some control over.

The reason they can't do that now is that even if they contract for the gas or enter into a joint venture and find the gas they cannot get it shiped into their facilities.

Representative RICHMOND. I sense that you agree with Mr. Steimel, Mr. Gooch, and Mr. Butler on deregulation of natural gas. Is that correct?

Mr. WILSON. Yes.

Representative RICHMOND. Phased out through 1985?

Mr. WILSON. Yes. But I feel that there is going to be a problem that a lot of people in industry haven't addressed, and that is that you still will have many disparties left, because there are no free market negotiations when in many areas, as is true today, you only have one pipeline company that you can negotiate with. That's called take it or leave it.

Representative RICHMOND. You feel that pipelines should be common carriers instead of public utilities?

Mr. WILSON. I think what we are proposing is a phase-in of both, with them having the right to buy gas and resell it for their own account, but with other people also having access to that system, because, again, they've had the rights of common carrier, they've had right of eminent domain, condemnation, and we feel the obligation should be there also.

Representative RICHMOND. The cost of building a pipeline is so prohibitive that I am not sure things would change particularly if you made them common carriers instead of public utilities.

Mr. WILSON. Oh, I think that it would change tremendously, because I think the financing would actually be easier for a common carrier pipeline, as it is in the crude oil business, than for the existing system, because when a transmission company goes into an area now, if they are looking to outside financing to cover some of that cost, the concern is that they can find enough gas for their own account to run through their pipeline to cover the cost and the amortization of the interest on the pipeline. If the pipelines were common carrier, the system would be more efficient because they would know that if they did build a pipeline into an area, even if they couldn't contract enough gas for their own account, that other parties would be in that area contracting gas, and it would probably be cheaper for those third-party buyers to ship through the existing common carrier pipeline than it would be for them to have to duplicate their own facility, which they now have to do.

So I think you might see fewer pipelines going in an area with more buyers interested in an area, and probably larger pipelines, which would result in cheaper shipping cost.

[The prepared statement of Mr. Wilson follows:]

PREPARED STATEMENT OF DAVID W. WILSON

I. INTRODUCTION

Mr. Chairman, my name is David W. Wilson and I am Vice President of Corporate Development and Compliance for Consolidated Oil and Gas Company, an independent oil and gas producing company headquartered in Denver, Colorado. I am appearing here today in my capacity as President of the Association for Equal Access to Natural Gas Markets and Supplies. Since that is such a long title, not subject to being easily shortened, we refer to this organization as "NGEA", standing for "Natural Gas Equal Access", so that is the way I will refer to it during the remainder of this presentation.

NGEA is a recently formed nonprofit association for independent producers and users of natural gas, established to promote greater access to natural gas markets for producers and to natural gas supplies for users. At the present time, access to natural gas markets is effectively limited by existing laws and regulations so that producers can sell their gas only to one kind of purchaser, a natural gas pipeline. Access to natural gas supplies is also limited by existing laws and regulations so that anyone wanting to buy gas must buy it from only one kind of seller, again, a natural gas pipeline. The result is that natural gas is the only commodity in our economy that must be sold to the shipper at the place of production and then bought from the shipper at the point of distribution or consumption. This works to the detriment of both consumers and producers as I shall describe in some detail.

NGEA greatly appreciates this opportunity to present its views on the economic implications of natural gas decontrol from the perspective of an organization whose main objective is to provide all producers, purchasers and consumers of natural gas with access to gas markets and supplies equal to the access now enjoyed only by natural gas pipelines. It is our contention that only with a truly national market for natural gas can the benefits of natural gas production be fairly distributed among the various components of the natural gas industry rather than being concentrated in the transmission sector of the industry. We feel that this will become even more critical as a higher percentage of natural gas becomes deregulated, whether by the timetable established by the Natural Gas Policy Act of 1978 (NGPA) or by intervening legislation accelerating decontrol.

Before discussing the lack of access for natural gas markets and supplies and the problems created for consumers and producers, it would be instructive to review briefly the history of gas transmission regulation.

II. HISTORY OF INTERSTATE PIPELINE REGULATION

A. Pipeline Regulation Before The Natural Gas Act

There was no regulation of interstate pipelines prior to 1938 when the Natural Gas Act was passed. Attempts by State and local governing bodies to impose controls on interstate pipelines were unsuccessful because of their interstate character and the Interstate Commerce Act of 1906 specifically excluded interstate pipelines from regulation by the Interstate Commerce Commission. This absence of regulation lead to a tremendous growth in pipelines so that by 1934, approximately 150,000 miles of high pressure transmission lines were in use.

Several attempts to impose effective regulations on pipelines failed to restrain the use of monopoly power they had attained. In 1933, for example, a common carrier provision was dropped from the Wheeler-Rayburn Act and when that bill was finally passed as the Public Utility Holding Company Act of 1935, holding companies that controlled interstate pipelines were exempt.

Regulation of pipelines had become very critical because pipelines themselves have the characteristics of a natural monopoly. A pipeline which serves a producing area could control the price of the gas it purchased from a producer and the price it charged distributors by virtue of its ability to exert a disproportionate influence on the market. An established pipeline could control the market because it could expand its capacity and reduce its purchase price until it eliminated any potential competition. This natural monopoly power of a pipeline in the field is more accurately described as a monopsony. A monopsony occurs when the buyer, rather than the seller, exerts a disproportionate influence on the market and on pricing of gas. It was against this background of extraordinary growth in the interstate pipeline industry without any regulation whatsoever that in 1938 the Natural Gas Act was passed.

B. The Natural Gas Act

In passing the Natural Gas Act (NGA), Congress acknowledged for the first time that pipelines provide a service which is affected by a public interest. The NGA stated as follows:

> It is declared that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that federal regulation in matters relating to transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest.

There were at least two elements of the public interest that were intended to be addressed and improved by the NGA. First, that legislation, despite the absence of a common carrier provision, was intended to reduce the monopoly power of interstate natural gas pipelines by encouraging the construction of competing pipelines and facilities. To that end, the NGA was also amended to enable pipelines to acquire rights-of-way by eminent domain and to allow end users under some circumstances to change over to new pipeline suppliers. From that point on, gas pipelines were regulated entities which had all the rights and advantages of common carrier status without the corresponding obligations to transport products for the general public.

Despite these attempts to facilitate competition among pipelines, many producing areas are today still served by only one interstate pipeline and many newly emerging production areas will likewise be served by only one interstate pipeline, under conditions that discourage or prohibit other pipeline construction in the future.

The NGA was very successful with respect to another of its objectives, however, and that was to ensure that consumers received the benefit of low wellhead prices pipelines paid producers. In the early days, producers had no real idea of the value of their gas or considered it a nuisance so that its wellhead price was far below its real value. As pipelines were constructed to connect new sources of gas, the pipelines themselves continued to hold field prices artificially low because of the monopsony power described above. The NGA employed a form of economic regulation of pipelines known as "rate regulation" which limited the resale price of gas to a "just and reasonable" level. In practice, this meant that the FPC would approve a resale price that allowed the pipeline to recover its costs plus a reasonable rate of return. The effect of this form of regulation was to transfer from pipelines to consumers the benefit of the lower wellhead prices achieved through the pipelines' competitive advantage over producers.

In 1954 the United States Supreme Court held that wellhead prices were subject to FPC control under the NGA's "just and reasonable" standard, with the result that government regulation replaced pipelines' monopoly power and competitive advantage as the primary means by which wellhead prices were held artificially low.

While the NGA did not directly regulate intrastate gas pipelines, it nevertheless had a profound effect on them and facilitated a pronounced interstate/intrastate market dichotomy. Since transporting gas destined for interstate markets subjected pipelines to federal regulation, intrastate pipelines refused to transport gas for interstate pipelines. In addition, producers became fearful that they might become subject to federal pricing regulations if their gas was at some point commingled with interstate gas during transportation. Besides, producers who had a choice would usually sell to intrastate pipelines since there were no wellhead price controls in the intrastate systems. Consequently, producers began putting clauses in their contracts with pipelines forbidding them to sell gas to anyone subject to Natural Gas Act regulation. The effect of these actions of both pipelines and producers was to shift new gas to the intrastate market and create shortages in the interstate market. During the 1970's when interstate gas shortages were widespread, Congress acted to remedy the market dislocations by enacting the Natural Gas Policy Act of 1978, the NGPA.

C. The Natural Gas Policy Act Of 1978

After forty years of regulation of the natural gas industry under the NGA, the Congress finally succeeded in passing new legislation in 1978, the NGPA, as it is commonly referred to. The NGPA did not significantly alter the rate regulation structure of the NGA, but it did bring intrastate gas under the same price controls it imposed on interstate gas and established a seven year phaseout period for specified categories of natural gas, intrastate and interstate.

The NGPA did not provide any greater access to producers and users of natural gas than had existed under the

NGA, but it did reduce the competitive advantage previously enjoyed by intrastate systems since intrastates could no longer pay higher prices for new supplies than interstate pipelines. In fact, the NGPA has caused a severe imbalance of supply in favor of interstate systems, creating critical shortages in intrastate systems. Others testifying before this subcommittee today will speak directly to the problems now being encountered by intrastate pipelines and their customers due to the built-in bias of the NGPA diverting most new supplies to interstate pipelines.

One significant change brought about by the NGPA, a change that is becoming more important every day, relates to the pricing procedure pipelines use to pay for gas produced by an affiliate of the pipeline, so-called affiliate production. Under the Natural Gas Act, pipelines primarily utilized the cost of service method, under which costs of production were used as the price paid and factored into the pipeline overall operational costs for calculation of rate of return. In any case, under the NGA, and in fact until passage of the NGPA, unrealistically low wellhead price controls had caused price discrepancies in favor of production affiliates to be relatively minor. It is interesting to note that due to a recent decision by the Court of Appeals of the Fifth Circuit, production affiliates are now able to receive NGPA ceiling prices, to be passed along to consumers, for gas that was paid for by consumers in previous cost of service charges. Thus, pipelines will be allowed to pay their own affiliates, in many cases, higher prices than producers receive for gas of the same vintage even though producers took the risks of exploration, development, and production while pipelines shifted those risks to consumers.

With respect to prices paid by pipelines to their production affiliates, the NGPA simply requires that the price be just and reasonable. To satisfy this requirement, all a pipeline has to do for a particular sale is show that it did not pay its affiliates more than the highest amount paid in comparable transactions with unaffiliated sellers. The pipeline is free to pass on to consumers the gas purchase costs of such purchases from affiliates unless the pipeline is guilty of "fraud, abuse or other similar grounds". This is a standard that the Federal Energy Regulatory Commission (FERC) has recently interpreted very narrowly, meaning that almost any price a pipeline pays an affiliate for gas is legal and can be passed on to consumers, even though pipelines may give preferential treatment to production affiliates with respect to non price elements such as the amount of gas the pipeline is obligated to take.

Many producers are being paid prices below established NGPA ceilings while production affiliates are receiving ceiling prices for each category because FERC allows the production affiliate to be paid the highest price being paid to any independent producer, not to all independent producers. Many gas contracts and amendments were and are being entered into with producers having no practical way of knowing the market for his production or for treatment being received by other producers. This occurs because of fear of antitrust implications of exchanging information. I am not offering any comment as to whether there are antitrust implications in exchanging this kind of information, but we think it is very pertinent to note that due to FERC protection, pipelines and their affiliates are able to have access to all contracts on their system and then use the most beneficial features of each. Our group feels that the acceptance by FERC of these practices allows the same kind of abuses to occur in gas that occurred early in the history of crude oil pipelines, before the trusts were broken and oil pipelines were classified as common carriers.

At the present time, then, the NGA and the NGPA combine to create a regulatory structure which effectively limits access to markets and supplies to pipelines while permitting pipelines to treat their own production affiliates preferentially. Because of this combination, we are seeing increases in gas prices consumers and distribution companies must pay pipelines, increases which are due to higher prices paid for deregulated gas owned or produced by the pipeline's production affiliate. Several of the Purchase Gas Adjustment proceedings of major pipelines are now being challenged by consumers, distribution companies and state utility regulatory bodies on the ground that prices paid for deregulated gas are too high and too much of that increased cost is going to the pipeline's production affiliate. Classification of pipelines as common carriers would solve this market-ordering problem as explained later.

III. INEQUITIES DUE TO LACK OF ACCESS CAN ONLY INCREASE IN THE FUTURE

The NGPA's decontrol schedule does nothing to change the major regulatory deficiencies cited above. Pipelines cannot be required to transport gas owned by others and pipelines will continue to be able to give preferential treatment to their production affiliates. All segments of the gas industry will be adversely affected by this combination of regulatory features except interstate pipelines.

Intrastate pipelines will not be able to compete for gas supplies except those directly on their systems. Where those direct sources of supply are also served by an interstate pipeline, the interstate pipeline will have the advantage of lower priced old gas and can outbid the intrastate for new supplies. In addition, the tremendous gas supplies of the OCS will remain unavailable to intrastate systems and their customers. Finally, intrastate pipelines will be faced with declining sources of independent production as interstate pipelines increase the activity of their production affiliates in areas served in common with intrastate pipelines.

Distribution companies will continue being unable to develop and produce their own system supplies even though, as discussed above, the pipelines supplying them will be free to do so. Distribution companies will not be able to receive gas produced either by joint ventures with producers or by direct purchases from producers. Distribution companies will be stuck with the marketing policies and practices of the supplying pipeline, even if those policies and practices are contrary to the best interests of the distributor.

Customers served by distribution companies will continue to be adversely affected by the lack of access of distribution companies as described above. Regional gas cost disparities will only increase under the current pipeline-dominated system with all of the attendant economic costs involved as industrial users react, often by moving to other locations. It should be obvious to anyone that it is cheaper to remove the barriers to gas shipment and ship gas rather than moving industries and shipping manufactured products. The plight of the fertilizer industry, with respect to gas supplies, demonstrates the folly that has often been the result of the natural gas infrastructure.

In addition, as gas prices increase through phased decontrol under the NGPA or otherwise, the existing form of pipeline regulation will not ensure that gas consumers receive the benefit of low prices paid to independent producers or low "takes" imposed on independent producers. Everyone acknowledges that there is a delivered price above which natural gas is not competitive with alternate fuels, generally accepted as approximately $7.00 per million Btu's (delivered). As long as pipelines keep the delivered price below that alternative fuel price, switching to alternative fuels will not take place. Pipelines can keep the delivered price below the alternative fuel price either by paying the same price or similar prices to all producers or by paying more to some than to others or by taking more gas from some than from others. If a pipeline pays producer A less than producer B for deregulated gas or takes more of producer A's gas than it takes of producer B's gas, there will be no benefit to the ultimate consumer of producer B having received a lower price than producer A or having sold less of its gas than producer A. That kind of pricing and volume preference is already happening with respect to deregulated gas produced from depths greater than 15,000 feet and with other incentive-priced gas. It is a trend that can only become more pervasive as interstate pipelines continue to increase their involvement in gas exploration, development and production. As a result, consumers can no longer be secure in the belief that rate regulation will preserve the benefits of pipelines driving hard bargains to obtain required levels of gas supply at the lowest possible price.

What is actually occurring today defies rational economics. The record is replete with situations where nonincentive gas priced much lower than incentive gas is not being taken or being taken in only minimal quantities. This situation exists in every producing area including California, the Rockies, the Gulf Coast, the upper

Midwest and the East. This is occurring because of the pipelines' strong vested interest in high cost gas, e.g., deep, decontrolled gas, Canadian imports and LNG. As previously discussed, under existing law, pipelines need only be concerned with keeping the final mixed gas price low enough to stay competitive with other fuels. They have carte blanc freedom to maximize their own corporate profits at the expense of both consumers and producers.

If a national market existed for gas -- which can only be accomplished by end users, distribution companies and other pipelines being able to negotiate directly with producers, and get the gas transported -- high cost gas could only be sold to those users willing to pay the price. If a market did not exist for high cost gas, its price would drop until it could find a market. Common carrier status would be a better market-ordering device than any incremental pricing scheme that can be devised and administered.

Direct end users of natural gas will have the same problems they have today in obtaining secure sources of supply or avoiding the adverse effect of incremental pricing. One very likely result is that end users will end up paying a delivered price for gas subject to curtailment that will be higher than the price independent producers are receiving from pipelines and higher than the price the user could have bought the gas for directly from the producer. These price comparisons are based on wellhead prices plus a reasonable transportation charge for user owned gas.

Independent producers will continue to be afforded very little protection by the NGPA requirement that amounts paid by interstate pipelines to its production affiliate may not exceed "the amount paid in comparable first sales between persons not affiliated with such interstate pipeline." As stated earlier, this requirement is considered satisfied if the pipeline pays its production affiliate a price no higher than it pays any nonaffiliated producer. Gas purchase negotiations are notoriously complex and resultant contracts are very difficult to analyze and compare with respect to indirect preferential treatment of one producer over another. This is particularly true when the NGPA requirement applies to only one of many important contract elements -- the price. There is no requirement that the pipeline take even one cubic foot of gas offered for sale by an independent producer or that the pipeline take any specified percentage of the gas it commits to buy at a stated price. It is well known within the industry that the best way to get the most favored gas contract is to take the pipeline's production affiliate as a partner.

Under these circumstances, independent producers will be faced with take-it-or-leave-it offers which might comply technically with NGPA requirements, but which do not provide equitable contract terms for the producer's gas. The incentive for this discrimination is obvious -- the pipeline can take a higher portion of gas from its own production affiliate, using independent production as its "swing supply", that is, to satisfy the periods of highest demand on the system. As long as the delivered price does not reach or exceed the alternative fuel price, pipelines will encounter no obstacles, regulatory or economic, in maximizing the profits of their production affiliates in the manner just described. Achieving maximum profits for a business is a legitimate and desirable objective, but when it is done through the use of monopoly power at both ends of the pipeline, it is totally contrary to all notions of fair play and protection of the public interest. This allows a regulated entity, the interstate pipeline, to convert the very regulations intended to protect the public interest to a means to increase the profits of its production affiliate.

IV. REMEDIAL ACTION: EQUAL ACCESS TO ALL GAS SUPPLIES

The deficiencies and abuses described above are so complex and interrelated that no system of regulation could be devised that would totally eliminate them and even if it could be devised, it could not begin to be administered effectively. As with most such attempts at system-wide regulation and enforcement, the cure is often worse than the problem and usually turns out to be ineffective after all. There is no need for the imposition of another comprehensive regulatory scheme and enforcement program in the gas industry. The solution lies in less regulation, not more, by amending applicable statutes to give all potential purchasers access to all gas supplies anywhere in the country and requiring pipelines to transport gas owned by others. This system could not be imposed on the pipelines overnight or all at once, but would have to be phased in over time to accommodate existing service obligations of pipelines. The phase in of this form of limited common carrier could be initiated by defining a particular category of gas that would be small in quantity at first but grow in volume over time as the only kind of gas that would be eligible for mandatory transportation. Pipelines would be allowed to continue to purchase all kinds of gas, including this category of gas, but once bought by another purchaser, such as another pipeline, a distribution company, or an end user, the pipeline would be required to transport that gas. The regulations that presently discourage transportation of non pipeline owned gas would have to be loosened to allow the pipeline to receive a just and reasonable tariff for that transportation service. These tariffs could be established in the same manner as the transportation tariff for other common carriers such as crude oil pipelines, railroads, etc.

This limited form of common carrier status can work since it would produce a national market for natural gas just as common carrier status for crude oil pipelines has achieved a national market for crude oil. It would impose far less regulatory restraints and requirements than any other change in the present pipeline regulatory structure and would result in maximum utilization of this country's natural gas resource in a manner that would spread the benefits of gas production fairly throughout the system without unfairly burdening any element of the system. It would benefit consumers since their local distribution companies would have more control over their gas acquisition costs. It would solve the market-ordering problem since high cost gas from any source could not be forced on consumers.

To be sure, there are tough problems, many of them, that would be encountered in the transition from the current system to the equal access system NGEA advocates. But those problems will be less severe than the problems that will be generated if the natural gas industry enters the era of greater deregulation under a pipeline regulatory structure developed for the 1930's.

Thank you again, Mr. Chairman, for the opportunity provided to NGEA to participate in this hearing on an extremely important matter. We would be pleased to answer any questions you or other members of the subcommittee may have. Thank you.

Representative RICHMOND. Thank you, Mr. Wilson. Let's hear from Mr. Palmer of the Audubon Society.

STATEMENT OF CHRISTOPHER N. PALMER, DIRECTOR OF ENERGY AND ENVIRONMENT, NATIONAL AUDUBON SOCIETY

Mr. PALMER. Thank you, Congressman.

I would like to have my prepared statement put in the record, too, if I may.

Representative RICHMOND. Without objection.

Mr. PALMER. My name is Christopher Palmer. I am director of energy and environment of the National Audubon Society.

We appreciate this opportunity to testify on natural gas deregulation.

This is an extremely complex subject. On balance we favor accelerating decontrol of all gas with a windfall profits tax on old gas. The revenues from such a tax should be specifically targeted to protect the poor. We do not support decontrol without such a tax. Even with the tax, accelerated decontrol should not be immediate; 1985 is more appropriate than 1982.

Representative RICHMOND. In other words, you agree with every witness so far that we should deregulate natural gas over a period ending 1985, but you say with it we must have the windfall profits tax.

Mr. PALMER. Exactly. Such a policy we believe would stop the subsidy of natural gas consumption; it would assist low-income families to withstand high energy prices; it would overcome the 1985 price fly up and other problems created by the 1978 Natural Gas Policy Act; it would strengthen the economy by making it more efficient; it would probably reduce oil imports; it would provide significant environmental benefits; it would reduce the pressure to develop synthetic fuels; it would encourage energy efficiency and solar energy investments; it would end an extraordinarily complex regulatory system; and finally, it would help contain and control energy prices in the long run.

It will be apparent to you, Congressman, that there are similarities, except for the windfall profits tax, between our position on natural gas pricing and that of the administration. However, I want to make clear that we strongly object to the administration's energy policy overall.

The key thrust of the energy policy that we advocate is that conservation investments should be given a chance to compete fairly against supply investments. The administration, despite the lip service it gives to the free market, currently provides subsidies to supply technologies, which are at least nine times larger than those for conservation.

Accelerated decontrol of natural gas prices is a crucial step to achieving energy efficiency, but it is not the only step. The Government must also undertake research and development, technical assistance, and information programs. The Government must stop subsidizing energy supplies so much, particularly wasteful projects like the Clinch River breeder reactor.

It is absolutely vital that the accelerated decontrol of natural gas be accompanied by programs to prevent suffering. Decontrol threatens the welfare and security of millions of low-income people unless a windfall profits tax is enacted, specifically targeted for the poor.

A windfall profits tax should be applied to old gas and the revenue used to benefit low-income people through compensation and upgrading the efficiency of their homes. Common decency demands such a tax. But energy pricing policy and welfare policy should be kept separate. Middle- and high-income people should not be shielded from real energy prices.

But the suffering from high energy prices is real and must be addressed. The poor should receive enough assistance to maintain their real income as energy price increases erode it.

We are gravely concerned that a windfall profits tax might be added in order to win gas control only to find later, as in the case of oil, that the poor are betrayed as the tax is weakened and withdrawn. This would mean becoming energy efficient on the backs of the poor and would be unconscionable.

Moreover, decontrol should not be immediate, but should be phased in over 2 or 3 years so consumers have time to make protective investments to cushion them from the shock of higher prices.

Now is a good time to correct the flaws in the NGPA. Gas is not in short supply. The oil market is currently slack, and with luck the U.S. economy is likely to experience stable oil prices in the short run. If Congress does not act now, it is likely that price controls will be reimposed into the 1990's in order to avoid a price spike in 1985.

A major obstacle to deregulation may be the contract problem which threatens to force gas prices above longrun market clearing levels.

Natural gas decontrol would accelerate the introduction of more efficient equipment, such as storm windows, cogeneration, fuel cells, and industrial heat pumps. Thus, and paradoxically, the opportunity to control energy prices grows considerably as energy prices are decontrolled.

Decontrol would also rid us of rolled-in pricing, and thus remove the economic crutches from synfuels and many other polluting energy projects. In other words, deregulation would remove the opportunity to subsidize expensive gas supplements by rolling such gas in with artificially cheap gas. Synfuels cannot compete economically, even with decontrolled gas, and the new supplies of gas which were brought about by higher prices under decontrol would underscore the absurdity of subsidizing this new industry with scarce Federal dollars, an industry which can only produce a substitute for natural gas at a price which is far in excess of the price of decontrolled gas.

Some people in favor of continued controls will say that even with a windfall profits tax the size of the transfer of wealth from consumers to producers is too massive to allow.

But this just shows how far we have to go to achieve replacement pricing, and how we are mortgaging our future to an expensive, high energy infrastructure.

The National Audubon Society urges this subcommittee to support accelerated decontrol of both gas and old gas, with a windfall profit tax on old gas, the revenues of which would be specifically targeted to protect the poor.

[The prepared statement of Mr. Palmer follows:]

PREPARED STATEMENT OF CHRISTOPHER N. PALMER

Mr. Chairman, my name is Christopher Palmer. I am Director of Energy and Environment in the National Capital Office of the National Audubon Society. We appreciate this opportunity to testify on natural gas deregulation.

The National Audubon Society is a non-profit environmental organization with nearly half a million members. Energy policy is one of our top priorities because of its enormous impact on the environment. Last year we developed the Audubon Energy Plan[1] which concludes that a combination of energy conservation and solar power would cost far less, promote a healthier economy, do more to strengthen national security, and do less harm to the environment than would an all-out effort to produce more oil and other conventional energy sources such as nuclear power. (Copies of the Technical Report are available from my office.)

Natural gas pricing is extremely complex. On balance, we favor accelerating decontrol of all gas with a windfall profits tax on old gas. The revenues should be specifically targeted to protect the poor. We do not support decontrol without such a tax. Even with the tax, accelerated decontrol should not be immediate. 1985 is more appropriate than 1982: consumers need time to make protective investments. Such a policy would:

- stop the subsidy of natural gas consumption,
- assist low-income families to withstand higher energy prices,

- overcome the 1985 price fly-up and other problems created by the 1978 Natural Gas Policy Act (NGPA),
- strengthen the economy by making it more efficient,
- probably reduce oil imports,
- provide significant environmental benefits,
- reduce pressure to develop synthetic fuels,
- encourage energy efficiency and solar energy investments,
- end an extraordinarily complex regulatory system, and
- help contain and control energy prices in the long run.

NATURAL GAS

Natural gas is by far the most benign of the hydrocarbon fuels.[2] It is clean, safe, abundant, versatile and home grown. It is also a lot cheaper -- even when decontrolled -- than gas from Alaska, from coal, or from liquified natural gas (LNG) imports.

Natural gas plays a critical role in U.S. energy markets, providing 27 percent of the energy consumed in the U.S. Gas is used in about 55 percent of all residential and commercial establishments, and provides about 40 percent of the energy consumed by U.S. industry and agriculture. Indeed, gas provides two and one-half times as much end use energy to consumers as electricity.

It is an important fuel, and one that has significant advantages over oil, coal and electricity. Federal policies which actively discourage its production and use should be abandoned.

PROBLEMS WITH THE ADMINISTRATION'S ENERGY POLICY

It will be apparent to this Committee that there are similarities -- except for the windfall profits tax -- between our position on natural gas pricing, and that of the Administration. However I want to make it clear that we strongly object to the Administration's energy policy overall.

A key thrust of the Audubon Energy Plan is that conservation investments should be given a chance to compete fairly against supply investments. The Administration, despite the lip service it gives to the free market, currently provides subsidies to supply technologies which are at least nine times larger than those for conservation.[3]

The National Audubon Society supports a market-oriented energy policy because this leads to the most efficient allocation of scarce investment capital. Technologies such as nuclear, synthetic fuels, conservation and solar should compete for investment funds in the marketplace, without competition being distorted and skewed by subsidies and price controls. When there are problems which the free-play of the market is unable to handle, such as lack of consumer information, environmental damage, discriminatory lack of access to capital, national security threats from excess oil imports, suffering of low-income people, or institutional bias against life-cycle costs, then the government must step in aggressively to correct such problems. This may require information programs, technical assistance, research and development, or federal regulation. Such intervention strengthens the free market against its own intrinsic weaknesses. Thus uncontrolled prices and desubsidization are necessary -- but not sufficient -- conditions for an energy efficient economy.

For example, the multifamily and rental housing sector is fairly impervious to market forces primarily because of the disjunction between tenants (who generally pay the fuel bills and therefore get the message to conserve) and landlords (who own the buildings and therefore must make the conservation investments).[4] By ignoring the problem of tenants and landlords, the Administration is ignoring one-third of the residential energy market place.

The Administration's energy policy is radically different from Audubon's. Rather than letting the free market decide which energy technologies will attract capital, President Reagan is massively subsidizing nuclear power in a vain attempt to make the plutonium breeder reactor the cornerstone of this nation's energy policy. This is inefficient and dangerous. At the same time, he has eliminated almost all federal solar and conservation efforts[5] while continuing subsidies to synfuels. The President's energy policy will lead to the development of costly and uneconomic energy sources, unnecessarily high energy demand, aggravated inflation, waste of capital, fewer jobs, and increased environmental abuse, including increased risk from the greenhouse effect, acid rain, and nuclear weapons proliferation.

There has been an avalanche of in-depth studies over the last few years showing that the only way to have sustainable and significant economic growth is through reducing the vast energy waste in our economy.[6] Except for decontrol, the President seems to be doing all he can -- presumably unwittingly -- to perpetuate this waste and oppose increased energy productivity.

POOR PEOPLE AND HIGH ENERGY PRICES

Price signals are the most basic stimuli for increased energy productivity. Audubon recognizes and respects the power of prices. Hirst and others[7] estimate that the energy price increases of the 1970's saved 10 quads in 1980.

But the use of price to bring about economic efficiency has a major impact on poor people, and the Reagan Administration's concern for poor people is totally inadequate. While we agree with the President that it is not good public policy to try to help the poor people by keeping energy prices artificially low for everyone, it is unconscionable that the poor should be neglected as energy prices rise. Gas decontrol will impose severe burdens on the most vulnerable segments of the population. In fact, the impact of decontrol will fall disproportionately on the poor.[8]

This country has a profound moral duty to see that the essential energy needs of low and fixed income people are met through a comprehensive social welfare policy. A free market in energy which gives poor people accurate price signals but does not compensate them for their loss of income, or facilitate their access to capital so they can respond with cost-effective energy efficiency investments, is fundamentally wrong. The people who benefit from low income energy assistance programs, for example, are the elderly, the disabled, and the working poor trying to avoid welfare. Helping them is a national responsibility and a moral imperative. It may even be a political imperative.

The average low-income household now spends well over 20 percent of its income on home energy needs. The figure is significantly higher in cold northern states where, in winter months, fuel bills will often exceed household income. 60 percent of the poor heat their homes with natural gas, so natural gas is a large low-income heating source. The elderly, with their fixed incomes and susceptibility to the cold, are particularly threatened by rising energy costs. Estimates of deaths caused annually by hypothermia -- below normal body temperature -- range well into the thousands.[9]

So the decision to deregulate natural gas prices must not be taken lightly, especially in view of the fact that the government programs offering the greatest long-term help to the poor -- the weatherization and the Solar and Conservation Bank programs -- are being eliminated by the Administration. In addition, the President is proposing a 30 percent reduction in the low-income fuel assistance program.

WINDFALL PROFITS TAX

The National Audubon Society believes that a windfall profits tax should be imposed on old gas as it becomes deregulated, and that this revenue should be dedicated to weatherizing homes of the poor to reduce permanently their fuel bills. Although we would usually like to see the proceeds of such a tax going into the general revenue fund rather than a dedicated trust fund, we believe that a dedicated trust fund may be justified in this case. Otherwise, the windfall profits tax might be used to balance the budget, while the suffering of the poor is forgotten.

In this regard, it is useful to bear in mind the sorry history of the windfall profits tax on oil. In 1979, the Crude Oil Windfall Profits Tax was promoted as a means of assisting the poor to meet their fuel bills and to capture some of the producer windfalls for the public. The tax has failed to live up to its promise. The revenue expectations were reduced substantially during Congressional consideration; and after the tax was enacted, revenues were further reduced last summer by $12 billion over five years.

Those groups -- like Audubon -- who recommend natural gas decontrol with a windfall profits tax to help the poor have a profound obligation to ask themselves if they aren't being had. After all, a bargain was struck on oil but not kept. We therefore have an understandable mistrust of those lawmakers who want realistic prices for gas and give us cavalier assurances that the poor will be cared for. The chances are they won't be unless natural gas decontrol is accompanied by a windfall profits tax on old gas with the revenues dedicated to helping the poor. Without such a tax, not only will the poor suffer unbearably, but the transfer of wealth from consumers to producers will be enormous and unjustified.

Natural gas decontrol will undoubtedly produce windfalls for producers. They are operating in a market dominated by the pricing policies of OPEC and therefore will be receiving much higher prices for old gas which produced a healthy profit for them at much lower prices. Decontrol with a windfall profits tax would mean consumers would receive accurate price signals while producers would share their windfall with the poor.

Despite President Reagan's July 26, 1981 letter to Representative Glenn English pledging to veto such a tax, we think such a tax can and should be enacted. We don't think it will make a significant reduction in the flow of old gas, and it would undoubtedly make a massive difference to the suffering of the poor.

REPLACEMENT COST PRICING

It will be useful at this point, Mr. Chairman, to step back and examine the basic case for decontrol. I will not address here the accumulating evidence that gas price controls do not appear to be any more successful in reducing prices to end users than were crude oil price controls.[10] I want instead to reiterate some basic principles which sometimes get forgotten in these types of debates.

A basic economic principle is that the prices consumers pay for any commodity should reflect its true value or replacement cost. There is no justification for shielding consumers from OPEC prices. The prevailing world price is the real cost to the economy for additional energy use. Every extra barrel of oil or Mcf of gas consumed in the U.S. means more imported oil at the OPEC price. There is no way world energy prices can be avoided, even with price controls. Price controls simply shift the cost elsewhere.

Price controls on gas represent a serious obstacle to conservation investments. Consumers are insulated from the full impact of costly new fuel sources because the cost of fuel from such sources is "rolled in" with the cost of fuel from less expensive older sources, so that the price of fuel rises only slowly toward replacement cost. Thus the consumer is not motivated to make some investments that are economically justified from the point of view of the nation.

Natural gas price controls mean that every day consumers are making investment decisions on the basis of erroneous assumptions about the replacement cost of natural gas. These investments will be in place for years and years, and constantly exert a drag on the economy, condemning it to inefficiency and high operating costs when expensive gas alternatives take over. High energy costs cannot be avoided, but they can be contained by letting prices rise to reflect them. And containing costs -- bringing them under control -- is the key to managing our energy problems.[11]

It is becoming increasingly clear[12] that controlling natural gas prices has not reduced poverty or curbed inflation. Indeed, price controls have encouraged excessive consumption, slowed exploration and investment, and reduced the market penetration of valuable energy efficient technologies. Ross and Williams[13] have pointed out that energy and price allocation programs have evolved to the point where there is now an astonishing degree of involvement of the federal bureaucracy in the marketing and management decisions of individual firms. In addition, artifically low natural gas prices have locked this country into an even higher cost energy future. A question worth pondering is: How did we ever get ourselves involved so deeply in price controls in the first place?

HISTORY OF NATURAL GAS PRICING

Since 1928, interstate -- across state lines -- transportation of natural gas has been regulated under the Natural Gas Act of 1938. Wellhead prices, however, were not regulated until the U.S. Supreme Court decision in Phillips Petroleum Co. v. Wisconsin in 1954. As a result of that decision, the Federal Power Commission (FPC) -- now the Federal Energy Regulatory Commission -- extended regulations to wellhead prices of gas sold into interstate commerce. Intrastate gas -- gas produced and sold within one state -- was not controlled.

The result of the 1954 Phillips decision was the creation of a "two market" system for pricing domestic gas. Regulation held interstate prices for new gas below unregulated intrastate prices, and consequently gas shortages occurred in the interstate market. Low prices also stimulated interstate demand, which could not be met by interstate supply. This shortage problem, together with the bitterly cold winter of 1976-77, led Congress to pass the Natural Gas Policy Act (NGPA) in 1978.

The NGPA brought intrastate gas under federal regulation for the first time and imposed absurdly complex price controls on gas production. Under the Act, wellhead prices for certain categories of gas ("new" gas) may be decontrolled permanently in 1985 or, later, in 1987. But other categories ("old" gas) remain price controlled until produced and used. As a result, 40 to 50 percent of domestic gas will remain controlled in 1985, and about 20 percent will remain controlled in 1990.[14]

NGPA's price structure included escalation rates designed to adjust wellhead prices up to market-clearing levels by 1985 and thus to produce a smooth transition to decontrol. Unfortunately, these were based on 1978 oil prices ($15 per barrel) and, as you know Mr. Chairman, oil prices have since more than doubled to $34 per barrel.

Title II of the NGPA involved "incremental pricing." Under these provisions, high "incremental prices" are charged to large industrial boiler users of interstate gas in an attempt to insulate other customers (primarily residential) from wellhead price increases. By focusing high prices on gas users presumed to be the most price responsive, the policy attempted to protect residential gas users from high prices.

Congress passed the NGPA in an atmosphere of real and perceived gas shortages. The then Secretary of Energy James Schlesinger had spoken authoritatively of natural gas as a finite and fast disappearing resource. So it was understandable that Congress would try to regulate gas demand in other ways too. It did this with the Powerplant and Industrial Fuel Use Act (FUA). FUA restricted the use of natural gas by industry and electric utilities on the basis that burning gas under boilers was not a good use of a vanishing fuel. Since 1978 when the NGPA was passed, the change in the perception of gas availability has been such that the Omnibus Budget Reconciliation Act of 1981 removed certain restrictions on electric gas use contained in FUA. The National Audubon Society favors the removal of all restrictions on gas use contained in both FUA and the NGPA.

PROBLEMS WITH THE NGPA

There are several problems with the NGPA. First, the NGPA is unlikely to achieve a smooth transition to decontrol. Oil prices have more than doubled since 1978, and so a sharp rise in price is likely to occur. DOE[15] estimates that between 1984 and 1985, average wellhead prices will rise by 70 percent, while average residential prices will rise by 36 percent. The Energy Information Administration[16] estimates that in 1985 the national average wellhead price will increase by at least 50 percent. The American Gas Association, which favors maintaining the NGPA, believes there will be no price spike. This issue, and the influence of indefinite price escalator clauses, are discussed more later.

Second, the NGPA is likely to cause market instability. Different markets and pipelines have uneven endowments of cheap, price-controlled gas. For example, some pipelines in the interstate market are expected to have a substantially larger endowment of price-controlled gas after 1985 than are the intrastate market, and other interstate lines. This could cause large shifts of decontrolled gas between markets and pipelines as interstate pipelines with deep cushions bid up the price of deregulated gas until the average price at retail clears the market. In other words, the lesser ability of intrastate pipelines and some interstate lines to "cushion" the effects of high-priced decontrolled gas with cheaper old gas will make it especially difficult for these state pipelines to compete for gas upon decontrol. This could generate political pressure for recontrol or for a government allocation program, similar to the now defunct "entitlements" program for oil which was so painfully unsuccessful.

Third, the price of deregulated gas will likely "fly up" above long-run levels in order to clear the market because of average rolled-in pricing. The so-called "price cushion" is unlikely to be captured by consumers, and the NGPA will not deliver the hoped-for price benefits expected from continued price controls on old gas. Partial decontrol -- as under the NGPA -- means that the benefits of price-controlled gas will be captured by producers through high deregulated gas prices. Today's prices for already deregulated gas (Section 107) support this view. Prices for deep gas range as high as $10 per Mcf -- way above long-run market-clearing levels.

Perhaps the most important problem with the NGPA is that the sharp price rises expected in 1985 may push the Congress into extending controls -- despite the fact that residential gas heat will still likely be cheaper in most regions than oil or electricity. So the debate about natural gas pricing is not really between accelerating decontrol versus keeping the NGPA. The stakes are much higher. The debate is really between accelerating decontrol versus extending controls into the 1990's. DOE[17] has concluded that extending price controls to 1995 would:

- cost the nation $31 billion by 1995 in economic efficiency compared to decontrol in 1985, and

- decrease U.S. energy security through larger volumes of oil imports and heightened vulnerability to oil supply disruptions. The impact of natural gas decontrol on oil imports is discussed more later.

Mr. Chairman, it may be useful now to summarize the reasons why the National Audubon Society supports accelerating natural gas decontrol.

SECURITY, EFFICIENCY AND ENVIRONMENTAL ADVANTAGES OF DECONTROL

Many of the advantages of accelerated decontrol have already been mentioned.

Oil imports would probably be reduced, assuming that clauses in existing gas contracts -- discussed more later -- do not push the price of gas so high that it becomes uncompetitive with residual fuel oil. If that unlikely event did happen, gas decontrol would probably lead to an increase in oil imports as industry and electric utilities switch away from gas to oil.

But if natural gas remains competitive with oil products -- which we think will happen -- then those consumers in the residential and commercial sectors currently using gas would conserve gas rather than fuel switch away from gas because it would still be cheaper than oil or electricity. This "conserved gas" would then become available for industry. The industrial and electric utility sectors would fuel switch away from oil to gas not only because gas would remain price competitive with residual fuel oil but because, with higher gas prices, industry can be assured of reliable supplies from both new production and "conserved gas." Thus, in the industrial sector, demand for gas would increase and imported oil would be backed out.

Although the impact of gas decontrol on oil imports is somewhat uncertain, our judgment is that oil imports would probably be reduced. Reducing imports would encourage the continued stability of world oil prices because of reduced U.S. demand pressure on the world oil market. This would have tremendous benefits for oil-poor third world countries as well as for ourselves. It would place downward pressure on consumer oil prices.

Excessive oil imports are still the greatest single threat to our economy and national security. Since the Arab oil embargo of 1973, the U.S. has become more, rather than less dependent on Middle East oil. In 1973, when we imported over six million barrels per day, about 18 percent of our oil imports came from the Middle East. By contrast, we now import slightly less oil -- about 5.6 million barrels a day -- but the portion of our imports coming from the Middle East has doubled. According to DOE, extending natural gas price controls to 1995 might increase oil imports by almost half a million barrels per day on average from 1982 to 1995.[18]

Accelerated decontrol is also likely to yield substantial economic gains. Some of these have already been discussed. For example, the NGPA decreases economic efficiency in at least three ways:

- low regulated prices provide erroneous price signals to users, thus distorting conservation and conversion decisions;
- users who do not have access to gas supplies (because of FUA restrictions, curtailments, or hookup moratoria) must use more costly alternative fuels such as imported oil and eventually synfuels, nuclear and coal; and
- the NGPA pricing scheme prevents the nation from producing the least-cost mix of energy supplies because of underproduction of price-controlled gas and overproduction of higher cost deregulated gas.

Some aspects of the economic inefficiencies of natural gas controls have become almost comically insane. For example, price controls on gas produce gas shortages; so the country pushes forward with a massive program to subsidize synthetic fuels, much of which will produce synthetic gas from coal. As a result, President Reagan, despite his preference for free-markets, recently awarded a $2.02 billion loan guarantee to the Great Plains coal gasification project in North Dakota. It will produce gas at a price far exceeding the price of decontrolled natural gas.

Another advantage of natural gas decontrol that we have not yet discussed is the environmental benefit. A soon-to-be published report by Chandler[19] points out that natural gas price controls detrimentally affect the environment by wasting gas which would otherwise be available to replace more polluting fuels. In addition, benign energy supply systems -- for example, solar energy and conservation-- cannot compete in the portion of the market (55 percent of residences, 40 percent of industry) supplied by artificially priced natural gas. Not even storm windows are cost-effective for gas consumers in many parts of the country at today's natural gas prices.

Chandler estimates that environmental benefits will come from the fact that the demand for oil will be reduced by more than 600,000 barrels per day as a result of decontrol. "Conservation gas" -- that is, gas made available through conservation -- could provide a large environmental benefit by making possible the use of gas in industrial cogeneration (of electricity and process heat) as well as in the continued use of gas in utility electric generation. This would eliminate the need to replace gas with coal as a fuel for electric generation in densely populated areas. Moreover, improved natural gas supply, by diminishing oil demand and oil price increases could further reduce the political impetus for a federally subsidized synthetic fuels industry.

Mr. Chairman, before I complete my testimony, I want to address the question of the expected rise in gas prices under decontrol, because this is central to the debate.

GAS PRICES UNDER DECONTROL

Some analysts believe that the wellhead price of deregulated gas should be approximately equal, on a Btu basis, to the wellhead price of deregulated crude oil. But the proper wellhead price is where gas demand and supply (both from increased production and conservation) are in balance -- the "market-clearing price."

This means that the price of gas will not rise as high as the equivalent price of OPEC oil.

Natural gas cannot compete with oil as a transportation fuel;[20] gas must compete in the buildings and industry markets with electricity and coal as well as oil. Thus its market price will be a function of prices for all three energy forms. In studying this, Sant[21] concludes that "it is highly unlikely that gas will ever be priced to consumers at the burner tip equivalent of oil."

The key sector is industry rather than buildings because it is much more price responsive. The wellhead price of gas would therefore equal the delivered price of competing fuels in the industrial market (delivered high-sulfur No. 6 fuel oil -- residual fuel oil) minus gas transportation, distribution and other post-wellhead costs.

It is bordering on the inconceivable that interstate pipelines would lose such a major segment of their market by letting the average delivered cost of gas become uncompetitive with residual fuel oil prices. Average wholesale prices for one percent sulfur residual oil in the first half of 1981 were approximately $32 per barrel or $5.10 per MMBtu, but prices have been falling steadily for a year and are expected to continue to do so. (On February 8, 1982, 1% residual was selling for between $28.15 and $28.50 on the spot market.) The retail mark-up on residual fuel oil is typically about $0.40 per MMBtu. Assuming that crude and product prices rise no faster than inflation between now and 1985, and using $32 residual as our benchmark, the market value of delivered natural gas to large industrial users will therefore be about $5.50 per MMBtu.

To calculate the wellhead market value of gas in 1985, transportation costs are subtracted from its delivered value. For large industrial users, the cost of moving gas from the wellhead to the point of use is about $1.00 per MMBtu. Thus the margin wellhead value of natural gas in 1985 will be about $4.50 per MMBtu or $28 per barrel.[22] Schroeder in reference 22 estimates that wellhead prices will average about $3.20 per MMBtu in 1984. $4.50 per MMBtu compared to $3.20 per MMBtu is a price rise the economy could reasonably be expected to manage, assuming the poor are given adequate help. If the price turns out to be $3.75 or $4.00 per MMBtu, the argument is so much stronger.

There is a complication, however. While a fly-up of acceptable proportions might occur due solely to market factors, a much more serious fly-up might occur because of so-called "indefinite price escalator" clauses in the contracts between pipelines and producers. Such clauses require gas prices to escalate immediately upon decontrol to prices well in excess of free market levels, thus forcing gas onto pipelines which is too expensive to sell.

CONTRACT PROVISION PROBLEMS

An indefinite price escalator clause can be broadly defined as a gas contract provision which (1) contains a "most favored nation" provision tying the wellhead price of natural gas to the highest price levels paid to other producers in the same region or field; or (2) contains a fuel-indexed clause tying the price level to oil or some oil product. Once the clause begins to operate, the price level cannot be predicted in advance nor controlled by the purchaser. Hence the name "indefinite."

Fuel-indexed price escalators, which, according to the American Gas Association,[23] appear in about 10 percent of all interstate contracts, will prevent marketplace equilibrium from developing because the automatic price boosts do not stop when a market clearing price is reached. Instead, the fuel-indexed escalator clauses will, upon decontrol, force many wellhead prices far above the market clearing level. Many transactions would be tied to the energy equivalent price level of crude oil, No. 2 fuel oil landed in New York Harbor, or various percentages -- in some cases exceeding 100 percent -- of these indicators.

Although these fuel-indexed contracts are a problem in themselves, of even greater concern is the prospect that the fuel-indexed price escalators will "trigger" the contracts containing most-favored nation clauses -- clauses which, according to the American Gas Association,[24] appear in 56 percent of all interstate contracts, and in nearly all post-April 1977 contracts. In addition, these contracts also contain "take-or-pay" provisions requiring pipelines to pay for the gas even if it cannot be sold. (More and more gas contracts now have "market out" clauses which allow pipelines to reject gas volumes they cannot sell.)

If the wellhead price of all the gas under most favored nation clauses should rise to meet the level of fuel-indexed contract prices, end-user demand for gas would drop precipitously, large markets would dry up, and the industry's fixed costs would be spread over a small pool of users who would consequently be hit by even more severe gas price rises.

Schroeder[25] has calculated that the contract problem could cause average wellhead prices to rise instantly by $2.10 per MMBtu upon decontrol, whereas a pure market response would be both smaller (in the range of $1.35 per MMBtu) and more gradual. Furthermore, the contract problem may become increasingly serious over time, causing wellhead gas prices to continue rising at the same time that market demand is falling, due to fuel switching among large price-sensitive users.

Mr. Chairman, I do not pretend to fully understand why pipelines have gotten themselves committed to contracts that threaten to take natural gas prices to unmarketable levels upon decontrol, but the contract problem is a potentially explosive issue which must be defused. The best way to do this would be for pipelines and producers to renegotiate their contracts. Producers may have an incentive to do this if they think, as is likely, that courts would not uphold such contracts given the radical change of circumstances since the contract was negotiated. In addition, why would producers want to bankrupt their only customers? If renegotiation does not occur voluntarily, then legislation to accelerate decontrol could possibly require renegotiation of such contracts; or give both pipelines and producers incentives to renegotiate;[26] or even conceivably statutorily modify the price escalator terms in existing contracts.

CONCLUSION

Few public policy issues are as complex as natural gas pricing. Accelerated decontrol of natural gas prices is a crucial step to achieving energy efficiency and environmental sanity but it is not the only step. For energy conservation, the government must also undertake research and development, technical assistance and information programs. The government must stop subsidizing energy supply so much, particularly projects like the Clinch River Breeder Reactor. Above all, the government must ensure that poor people have access to capital so they can respond to high energy prices.

It is also absolutely vital that accelerated decontrol of natural gas be accompanied by programs to prevent suffering. Decontrol threatens the welfare and security of millions of low-income people unless a windfall profits tax is enacted specifically targeted for the poor. A windfall profits tax should be applied to old gas, and the revenue used to benefit low-income people through compensation and upgrading the efficiency of their homes. Common decency demands such a tax. But energy pricing policy and welfare policy should be kept separate. Middle and high income people should not be shielded from real energy prices. It is essential that this country catch up with its European allies and stop controlling energy prices. Food and clothing -- also necessities -- are not reduced in price for everyone in order to protect the poor. But the suffering from high energy prices is real and must be addressed. The poor should receive enough assistance to maintain their real income as energy price increases erode it. And new assistance has to take into account the uncompensated erosion which has already taken place since the early 70's.

We are gravely concerned that a windfall profits tax might be added in order to win decontrol, only to find later -- as in the case of oil -- that the poor are betrayed as the tax is weakened and withdrawn. This would mean becoming energy efficient on the backs of the poor, and would be unconscionable. Moreover, decontrol should not be immediate but should be phased in over two or three years so consumers have time to make protective investments to cushion them from the shock of higher prices.

Mr. Chairman, now is a good time to correct the flaws in the NGPA. Gas is not in short supply, the oil market is currently slack, and -- with luck -- the U.S. economy is likely to experience stable oil prices in the short run. If Congress does not act now, it is highly likely that price controls will be reimposed into the 1990's in order to avoid a price spike in 1985. A major obstacle to deregulation may be the contract problem, which threatens to force gas prices above long-run market clearing levels.

Natural gas decontrol would accelerate the introduction of more efficient equipment, such as storm windows, cogeneration, combustion furnaces, fuel cells and industrial heat pumps. Thus (and paradoxically) the opportunity to control energy prices grows considerably as energy prices are decontrolled.

Decontrol would also rid us of rolled-in pricing and thus remove the economic crutches from synfuels and many other polluting energy projects. In other words, deregulation would remove the opportunity to subsidize expensive gas supplements by rolling such gas in with artificially cheap gas. Synfuels cannot compete economically with decontrolled gas. And the new supplies of gas brought about by higher prices would underscore the absurdity of subsidizing this new industry with scarce federal dollars -- an industry which can only produce a substitute for natural gas at a price which is far in excess of the price of decontrolled gas.

Some people will object to changing NGPA because Section 107 gas -- deep gas -- will no longer receive very high prices (up to $10 per Mcf or about $60 per barrel of oil equivalent). Deep gas commands such a high price because it is rolled-in with price-controlled gas. But deep gas should not be given an unfair advantage. Gas should be produced and developed starting with the most cost-effective investments. If this means that exploration and development of deep gas slows a little until gas prices rise, then so be it.

Some people in favor of continued controls will say that even with a windfall profits tax, the size of the transfer of wealth from consumers to producers is too massive to allow. But this just shows how far we have to go to achieve replacement pricing, and how we are mortgaging our future to an expensive high energy infrastructure.

The National Audubon Society urges this Committee to support accelerated decontrol of both new and old gas with a windfall profits tax on old gas, the revenues of which would be specifically targeted to protect the poor.

Mr. Chairman, that concludes my testimony. I would be pleased to answer any questions.

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Representative RICHMOND. Thank you, Mr. Palmer.

Mr. Steimel, I know in your prepared statement you indicated that plants had been forced to close in Louisiana due to a shortage of gas. How much of that problem would be a shortage of gas and how much of the problem would be the current recession?

Mr. STEIMEL. It is a combination. They are not closing because of the shortage of gas, because we have been able to find gas.

Representative RICHMOND. So the NGPA hasn't caused any plants to close. Right?

Mr. STEIMEL. The NGPA has not actually—no, has not caused plants to close.

Representative RICHMOND. You're afraid it might?

Mr. STEIMEL. No; let me back up. There is one case where there is a plant that makes fertilizer. I think it has three fertilizer plants. It happens to be on one pipeline, with two of those plants getting gas at a very, very low price. A later plant is on another pipeline and the contract price for gas was considerably higher. These are all ammonia plants. It closed one because of the price of gas.

Representative RICHMOND. In general we can't say that the plants in Louisiana are closing now because of a shortage of gas.

Mr. STEIMEL. They are not closing because of supply. They are closing because of a soft market in the chemical industry and the aluminum industry, and they are looking to the least cost effective plant. They happen to be falling in Louisiana, in the case of Kaiser Aluminum, because that is the least cost effective, and energy is the reason for the cost effectiveness in the case of Kaiser Aluminum.

Representative RICHMOND. Mr. Gooch, would you say that the way things are going intrastate markets are being crowded out by interstate on price bidding?

Mr. GOOCH. That's part of the problem. The problem is also between interstate pipelines. It is not a problem, in my view, where it is just the interstates against the intrastates, although that's a very severe problem. The EIA projects that in 1980 the cushion difference between the intrastate market and the interstate market was $2.8 billion. In 1987 the cushion difference will be $10.2 billion in the average cost of gas in those markets.

Representative RICHMOND. My next question to you is what kind of dollars are you talking about?

Mr. GOOCH. What dollars are these?

Representative RICHMOND. You see, when you make a 5-year or 6-year projection I have to know what type of inflation factor you have in it.

Mr. GOOCH. All in 1981 dollars.

The problem that you have with Transco, Texas Eastern, and Tennessee is typical. You have the States of New York and North Carolina intervening at the FERC saying we can't live with the status quo. We can't live with it. We can't live with it on the Transco system. So the problems that Mr. Steimel was talking about in Louisiana are coming your way.

Representative RICHMOND. Mr. Gooch, you can probably answer this, too. I suppose pipelines are willing to pay twice the price of oil for certain gas in order to average out their costs and have supplies?

Mr. GOOCH. Let me think that through a second.

Representative RICHMOND. Section 107 gas is incredibly expensive, isn't it?

Mr. GOOCH. Yes, sir. The answer is, if they have a deep enough cushion so they can average it in and still beat the oil market. And they do, they beat the 6 oil market and they beat the home heating oil market by a factor of almost two.

Representative RICHMOND. It depends on the size of their cushion.

Mr. GOOCH. Yes, sir, it does. But still, the average home heating oil person in this country pays about $8.50 a million Btu basis, and the average gas homeowner pays $4.60-some-odd today, $4.96 today.

Representative RICHMOND. Say that again. Can I have that again?

Mr. GOOCH. All right. I looked at the latest EIA numbers. If I have it right, in September 1981 the average person in the United States using home heating oil paid $8.63 on a Btu basis, and the average homeowner using gas paid $4.96.

Representative RICHMOND. What about coal? Do you happen to have that number?

Mr. GOOCH. I have 6 oil. Six oil was $4.77.

Representative RICHMOND. No. 2 oil was $8.63, I take it?

Mr. GOOCH. Yes, sir. Coal is much less. You can extrapolate on that chart that I gave you.

But therein lies the problem. We have this tremendous disparity also between the people that use heating oil for their homes and the people that use gas. In a sense it is not fair. It is not fair to have one so far out. It causes distortions in the home heating oil market in your region, too.

Representative RICHMOND. Let me ask you and Mr. Steimel and Mr. Palmer—we have already heard from Mr. Wilson—on the advisability of making pipelines into common carriers instead of public utilities. Would that have any great change in the system?

Mr. GOOCH. I would like to answer that in two ways. I would like to reserve comment on the common carrier aspect.

Representative RICHMOND. It would still be under the same basic control, I think.

Mr. GOOCH. What I was going to suggest is the Natural Gas Policy Act itself relaxed in some degree the ability of pipelines to transport gas for each other. Not that more improvements aren't needed, and they are; and adjustments. But I'm not at the point where I would advocate common carrier status.

Representative RICHMOND. How do you feel, Mr. Steimel?

Mr. STEIMEL. I don't believe I am qualified to make a commitment one way or the other on that, but I do feel that if there is no relief any other way, we are going to have to find some way to get the interstate pipelines hauling some gas for us. So his proposal would give us some relief. I don't know what all the negatives are, so I would rather not comment.

Representative RICHMOND. I know I have your opinion, Mr. Wilson.

Mr. Palmer, being from the Audubon Society, you are interested in pollution. Certainly, as gas prices become higher it makes oil cheaper and easier to import. Now we know oil is a lot more of a pollutant than gas. Do you still feel that higher gas prices would be in the interest of your society?

Mr. PALMER. Well, our feeling is that as you decontrol natural gas the price of gas is still going to be competitive with oil, as several witnesses have already said, and therefore, for residential homeowners I think there will be some conservation of gas but no fuel switching to oil. For the electrical utilities and the industrial market, I think there we might see an increase in demand for gas because of pentup demand now not satisfied and a sense that they will have that as a result of higher prices and increased production, and also increased production of conserved gas. In other words, gas made available from the residential sector now wasted, economically wasted. There will be a feeling in the industrial sector that there will be more secure supplies of gas in the future, and therefore, a feeling, I think, that we may see more demand for it.

Representative RICHMOND. As an environmentalist, is it your opinion that higher gas prices would certainly lead to more use of national wilderness lands for drilling?

Mr. PALMER. Yes, but less use of land for things like synthetic fuels, which are much more damaging.

Representative RICHMOND. In other words, oil shale would be much more damaging to the environment than drilling for gas in wilderness lands?

Mr. PALMER. Yes, I think so.

Representative RICHMOND. A windfall profits tax, gentlemen, sounds fine. Mr. Gooch doesn't like it. Mr. Steimel and Mr. Palmer think it ought to go in along with deregulation.

Mr. PALMER. I strongly object to Mr. Steimel's view that it should be used to balance the budget.

Representative RICHMOND. For my part, Mr. Palmer, anything that would balance the American budget and reduce inflation and get this country back to work again, I think would be very, very much in everybody's interest.

Mr. PALMER. I agree. But the question is whether you want to do it on the backs of the poor, Congressman.

Representative RICHMOND. No, we don't want to do it on the backs of the poor. That's the problem with the windfall profits tax.

Mr. PALMER. That's what you will be doing if you deregulate gas and use the tax revenues for balancing the budget.

Representative RICHMOND. Mr. Gooch.

Mr. GOOCH. The problem that you have when you face a windfall profits tax is twofold. In the waning days of President Carter's administration the suggestion was made to use the windfall profits tax as a device to prevent market disorder. You could do that. Very, very strange way to do things. The problem that you have when you start talking about windfall profits tax is if you have a punitive tax on the producer, if you take away the revenues that otherwise are used to do exploration and developmental drilling, what have you done? Because the object of the exercise is not to cut off your current and future gas supply. The object of the exercise is to increase and maintain it, and a windfall profits tax, if you're not careful, will drive the incentive to explore and develop natural gas downward.

Representative RICHMOND. Not necessarily. As long as you have the depletion allowances in place, it wouldn't necessarily be a disincentive to producers.

Mr. Gooch. I ask you to look again at the revenue effect of the depletion allowance. It cannot compare in order of magnitude to the potential of a windfall profits tax that would tax any increase over the regulated price of gas or attempt to capture what the producer has been promised under the status quo. The status quo he's been promised is a free market for gas, for a certain type of gas after 1985. Now you are going to say we are going to take all that away from you.

Representative Richmond. Mr. Gooch, with your background in the business, I'll yield to you.

Gentlemen, any further comments?

I certainly want to thank you all for coming. You've provided us with a very interesting overview of this question, and I see a certain amount of unanimity in your testimony, which means at least there is a sound body or feeling on the side of this subject.

Thank you very much.

Our next panel is Mr. Mark Cooper, Consumer Energy Council of America; Mr. Henry B. Taliaferro, vice president of the GHK Companies, Oklahoma City; and George H. Lawrence, president of the American Gas Association. We will hear first from Mr. Lawrence.

STATEMENT OF GEORGE H. LAWRENCE, PRESIDENT, AMERICAN GAS ASSOCIATION, WASHINGTON, D.C.

Mr. Lawrence. Congressman, I am George Lawrence, president of the American Gas Association. I have a very comprehensive prepared statement I would like to have included in the record.

Representative Richmond. Without objection.

Mr. Lawrence. How much would you like me to take for my oral presentation, because I heard several points I would like to address in the recent testimony.

Representative Richmond. If you each would take 5 minutes I would appreciate it, and then we could have a chance to ask some questions.

Mr. Lawrence. All right. Fine.

I will try to address the status of where we stand on decontrol. I might point out too that the American Gas Association represents some 300 distribution transmission companies in your area—Brooklyn Union, ConEd, Long Island Lighting, and Transco, and Tennessee Gas Transmission, the pipelines that serve that area.

I would like to address where we stand on decontrol. I would like to address this issue of the old gas cushion and how that seems to be causing all the ills that afflict us today. Point No. 3, the windfall profits tax you've asked about. Point No. 4, just very briefly on the common carrier, a point that has been brought up.

On decontrol. Representing distributors, pipeline companies, buyers of gas, people that have the obligation to serve 160 million consumers, we are not antidecontrol. We have supported the decontrol of the new natural gas, and when I saw new gas, I mean that which will cause a future exploration and drilling incentive, new supply. Not something that is going to raise the price without a significant concurrent benefit in new supply, and that's very much in the consumer's interest. You've heard it said here how much cheaper gas is than alternative forms of energy, how much more environmentally preferred, and that's true. So there are huge benefits to that improved supply.

But we don't need the meat-ax approach of deregulating all existing flowing gas, and the 1985 decontrol proposals would phase out the controls on about two-thirds of the present proved reserves of natural gas. This we say we do not need as that incentive. New gas, yes; old gas, 1985 much too fast.

Representative Richmond. Mr. Lawrence, in order to simplify things, we've all heard the testimony of Mr. Butler and the panel.

Mr. Lawrence. Right.

Representative Richmond. All are in favor of the 1985 Decontrol Act. Right?

Mr. Lawrence. Yes.

Representative Richmond. How would you, as the American Gas Association representative, change that?

Mr. Lawrence. We would like to decontrol new gas tomorrow and provide a greater incentive at all depths, deep gas, 10,000 to 15,000 feet, 4,000 feet, new gas, and provide that prospective incentive. Old gas, no. We are not so much interested in doing stupid things like keeping the price on certain existing flowing gas down to a level where there might be premature abandonments of existing proved reserve, failure to develop some of the things that are actually contracted for.

But there are administrative remedies for that, and I think the Federal Energy Regulatory Commission is contemplating some of them.

So that's our basic point. It's new gas decontrol, yes; old gas, no.

Now I think you've heard this old gas cushion and how it is permitting all of the companies to come in and use that old gas cushion to bid the price sky high in the deregulated market. The only thing is, it is not the companies with the big old gas cushion that are doing that high bidding; it's the companies that are gas short. They need gas. They have less leverage. They have less bargaining as we move through this transition zone to total deregulation of new gas in 1985.

Representative Richmond. In other words, every pipeline is not bidding on this expensive deep well gas. Right?

Mr. Lawrence. Well, the ones that are doing most of the deep well high bidding are those that have a lesser cushion of old gas, not a greater cushion of old gas.

Representative Richmond. How can they afford to bid as high as they do when they are bidding actually twice the price of oil right now?

Mr. Lawrence. Well, I think what they are recognizing is that won't sell and compete in the marketplace, and I think over the past years we have had this debate on accelerated decontrol there have been several bursts of reasonableness, No. 1 of which is you don't compete at the price of No. 2 fuel oil plus a premium in the natural gas market. The competitive market clearing price for gas is that which will compete in the industrial market, and that's somewhere in the range currently of 60 to 70 percent of the price of crude oil in the field, not home heating oil in the marketplace.

So I think we are moving away from that and doing so very quickly.

The second point, the EIA data also show, as far as this great bidding disparity between the interstate and intrastate companies, is that the embedded rolled-in price of both interstate and intrastate companies is about the same. There is no great difference. So I think the villain role of this old gas cushion has been overplayed a little bit.

The windfall profits tax, we're against it, and we're going to fight it, because it is a tax balancing the budget by the consumers of this country, poor, medium income, or whatever. It's counterproductive to consumers. It's counterproductive to producers. I think those that think that it's going to be limited only to the existing flowing gas are kidding themselves. That wasn't the case in crude oil and it won't be the case in gas, and you are liable to find yourself shackled with this tax for the rest of the duration and we're opposed to it.

Finally, I would somewhat disqualify myself as being a great expert on pipeline transmission. But several points came to mind as I listened to Mr. Wilson, I believe it was, and he said the natural gas business is the only one where the producer doesn't sell directly to the consumer. You sell to a shipper, and I think there is a reason for that. I think part of that reason is why you build a million-mile pipeline system that's in every State of this Nation. It's a national asset. It's the most efficient environmentally benign energy system there is. It has been built because you need the long-term contract benefits between buyer and seller and financing. Then that financing is paid for by existing consumers, and there can be some considerable disruptions if someone is permitted to come in and preempt all or part of that pipeline system.

So, again, I think there probably are some horror stories somewhere where there need to be some producers that are connected up and lower price gas brought in. But, again, the meat-ax approach to that of making every pipeline in the country a common carrier seems wrong to me.

I think I've used my 5 minutes, Congressman.

[The prepared statement of Mr. Lawrence, together with an attachment, follows:]

PREPARED STATEMENT OF GEORGE H. LAWRENCE

Introduction

I am George H. Lawrence, President of the American Gas Association (A.G.A.). The American Gas Association is a national trade association, which represents nearly 300 natural gas distribution and transmission companies serving over 160 million U.S. consumers in all 50 states. These pipeline and distribution companies had 215,000 employees in 1980 with a total payroll of over $4.6 billion. Another $4.6 billion was paid in the form of taxes to federal, state, and local governments. We are pleased to provide you with our industry's views on the economic impact of natural gas deregulation.

Natural gas currently provides about 27% of the energy consumed in the U.S. Gas is used in about 55% of all residential and commercial establishments in the U.S., and provides about 40% of the energy consumed by U.S. industry and by U.S. agriculture. Almost all gas used in the U.S. is produced domestically and gas provides two and one half times as much end use energy to consumers as electricity.

Since the enactment of the NGPA three years ago there has been a growing national awareness of the importance of gas supply and demand to our nation's security and economy. We, therefore, commend the members of this Joint Committee for initiating these hearings on the economic impact of natural gas deregulation. In this regard, A.G.A. believes that the current schedule of deregulation established by the Natural Gas Policy Act of 1978 (NGPA) has provided -- and is continuing to provide -- effective incentives to meet our gas energy needs now and in the future. These incentives in the NGPA have been provided without causing the severe economic effects which we foresee would be the result of total deregulation over two or three years.

At the outset it should be recognized that "total gas deregulation" really means total price deregulation for one-third of the natural gas industry -- the producing segment. The pipeline and distribution utilities which comprise the other two-thirds of the industry will continue to be subject to regulation of rates and other activities by the FERC or state regulatory bodies.

A.G.A. has been a long-standing advocate of decontrolling the price of new gas. Throughout the 1970's, A.G.A. actively supported, along with gas producers, specific legislation to decontrol new gas only: Pearson/Bentsen, Krueger/Brown, Pearson/Bentsen II, and the compromises which lead to the NGPA. It should be noted that the A.G.A. does not represent producers, so our advocacy for decontrol of new gas was based solely on our recognition of the need for incentives for the exploration, development, and production of new sources of gas. A.G.A. has never supported the decontrol of old gas -- which was never an issue in the past.

Short-term phase-out of controls on all gas would not help satisfy anticipated demand levels and would unnecessarily hurt gas consumers. This is because phasing-out controls on old gas makes no significant contribution in adding reserves or increasing production.[1] It would however hurt gas consumers by raising average prices. This is particularly true for heavy industry, presently reeling under the impact of high interest rates and foreign competition (often government subsidized). Low-and fixed-income citizens, faced with budget cuts in fuel assistance and other essential services, would also bear a disproportionate cost burden under total deregulation.

Alternative Deregulation Scenarios

Through the recent debate on accelerated and total deregulation, one fact has frequently been downplayed -- the fact that the NGPA is itself a deregulation Act and as such has substantially changed the natural gas industry and the

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1/ Premature abandonments of old gas wells certainly should be avoided, but the FERC has administrative remedies under the NGPA to prevent such abandonments. Under NGPA §§104(b)(2) and 106(c), the FERC has the discretion to raise the ceiling price of old interstate gas to a "just and reasonable" level within the meaning of the Natural Gas Act of 1938. Gas from old wells with sufficiently reduced levels of production could also obtain a higher price by recertification as NGPA §108 stripper well gas.

national economy. Therefore, in order to address adequately the economic impact of deregulation, it is necessary to examine the effect of the NGPA as well as alternative scenarios. A.G.A. has focused primarily on three scenarios: the NGPA as it currently exists, the NGPA amended to restrict certain "indefinite" price escalator clauses[2] in gas purchase contracts between pipelines and producers, and phased total deregulation by 1985.

A.G.A. analysis shows that of these three scenarios, the NGPA amended to restrict "indefinite" price escalator clauses offers clear advantages over the existing NGPA and the total deregulation scenarios.

The Effect of the NGPA to Date

Certainly, the supply response to the wellhead production incentives in Title 1 of the Natural Gas Policy Act (NGPA) has been impressive. Seismic crew activity has reached the highest level in 20 years, the rig count for gas drilling has risen

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2/ An *indefinite* price escalator clause can be broadly defined as a gas contract provision which a) contains a "most favored nation" provision tying the wellhead price of natural gas to the highest price levels paid to other producers in the same area, state, or along the purchasing pipeline's system; or b) contains a fuel-indexed clause tying the price level to oil or some oil product. Because the level price level cannot be predicted in advance nor controlled by the purchaser once the clause begins to operate, these types of clauses are labelled "indefinite". A *fixed* escalator clause permits price increases over the life of the contract but establishes at the outset what these price increases will be. An *area rate* clause ties the wellhead price to the price ceiling increases that occur every month under the NGPA.
Frequently a single contract will contain more than one type of escalator clause -- with the producer receiving whichever of the possible prices is highest.

notably over 1978-79 levels (from 2500 rigs in mid-1978 to 4500 rigs in December 1981), and drilling activity is at record levels (e.g., total gas well completions for 1981 were up 13.6% over 1980 and exploratory gas wells were up 21.1% over this period, 14% of gas wells are exploratory compared to 6% for oil wells). In addition, 778 billion Btu of gas were discovered for every successful gas well completion in 1980, as compared to 279 billion Btu of oil and 94 billion Btu of gas discovered per successful oil well. Recent reserve additions have reached the highest level in 12 years -- a 90% replacement rate. Between June and November 1981 gas production was up 5% as contrasted with same period in 1980 -- with the possibility that 1981 gas production will be at the highest level since 1974.

These exploration, drilling, and production incentives were not provided free of any social costs, however. Average wellhead prices have increased from $.92 per MMBtu in 1978 to about $1.85 in 1981 -- a rise of 100% in three years.3/ The average residential customer's price of gas for heating has risen from $2.62 per MMBtu in 1978 to about $4.60 in 1981 -- an increase of 73% in three years.3/ Industrial customers' prices have risen 74% from $2.12 in the third quarter of 1978 to $3.69 in the third quarter of 1981.4/

3/ Estimated 1981 price based on 9 months of data reported in DOE, Monthly Energy Review, January 1982.

4/ A.G.A., Quarterly Report of Gas Operations, Third Quarter.

Without the price incentives provided by the NGPA, gas supplies would probably have continued to drop at the rapid rate of the mid-1970s. Congress very carefully balanced the national need to provide adequate supplies of gas against higher prices. The NGPA was the result -- providing for incentives to explore and produce new gas supplies while preventing huge average price increases by continuing controls on old gas.

Economic Effect of Total Deregulation

It is highly significant that both recently released major government studies of wellhead decontrol (i.e., A Study of Alternatives to the Natural Gas Policy Act of 1978, DOE November 1981; and Analysis of Economic Effects of Accelerated Deregulation of Natural Gas Prices, EIA, August 1981), as well as gas industry analyses, conclude that decontrol of old gas will result in less long-term gas production and higher gas prices as contrasted with just new gas decontrol.

For example, the November 1981 DOE study, in comparing net present value effects between 1982 and 1995 of the NGPA to full decontrol in 1982, concluded that full decontrol in 1982 would shift as much as $79 billion from gas consumers to producers. Producers would net, after taxes and public royalties, $49 billion. (See Table 20 of the DOE November 1981 study).

An attached A.G.A. study entitled "Consumer Impact of Indefinite Gas Price Escalator Clauses Under Alternative Decontrol Plans," November 6, 1981, compared the NGPA -- both with and without indefinite escalator clause restrictions -- to a three-year phase-out of all wellhead price controls starting in January 1982. The average national average residential heating bill under a three-year phase-out would soar from a current 1981 level of $390 to $977 in 1985. (In inflated dollars). In contrast, the NGPA with escalator clause restrictions, would result in a gradual upward trend starting from $390 to $656 in 1985 and reaching $947 in 1990 (in inflated dollars). (See Attachment 1). A.G.A. believes that a gradual, steady increase is more beneficial to the national economy and gas consumers than massive sharp increases -- even when such price boosts are eventually followed by price moderation.

With regard to the macroeconomic impacts of total deregulation in 1983 and 1984, a report by the Wharton Econometric Forecasting Associates (WEFA) should be reviewed.[5/] The report shows that phasing in total deregulation starting in 1983 and deregulating in 1985, would cause an additional 1.8 percent rise in inflation in 1983 and a 1.2 percent rise in 1984. WEFA projects that the direct price impact is about half of the toal impact, with the remaining half of the total caused by the increase in the price of all goods that use natural gas. In addition, WEFA projects a loss of $18 billion of real GNP (in 1972 dollars) in 1983 and an overall decline of .3 percentage points between 1982 and 1984 in the growth rate of real GNP.

[5/] The Wharton Annual Model Alternative Scenarios, WEFA, December, 1981.

The NGPA in 1985

Some observers have made the argument that the NGPA, as currently enacted, will hold gas wellhead prices too low over the next three years and, on January 1, 1985, there will be a rapid "fly-up" in the wellhead price of gas -- irrespective of whether or not escalator clause problems are defused. This theory is predicated on the belief that the free-market wellhead price of deregulated gas should be approximately equal, on a Btu basis, to the wellhead price of deregulated crude oil. These observers note that the NGPA, when enacted, was designed to allow the §102 gas price (i.e., price for gas from wells drilled after February 1977 into new fields) to reach parity with oil at about $2.60/MMBtu in constant 1978 dollars (or $3.39 in constant 1981 dollars).[6] Since crude oil currently sells for about $5.35 per MMBtu[7], these observers believe that the NGPA target is too low and a "fly-up" is inevitable in 1985. A.G.A. does not share this belief.

First, since the §102 gas price increases at a rate of 4% plus inflation, and inflation has been higher than projected in 1978, the §102 price has risen somewhat faster than expected. Second, A.G.A. has never agreed with the concept that oil and gas should be priced on a Btu-equivalent basis at the wellhead. We believe that the proper wellhead price level set by market forces is where gas supply and demand are in balance (i.e., the "market-clearing" price). This wellhead price would equal the delivered price of competing fuels in the industrial market (delivered high-sulfur No.6 fuel oil or, in some markets, coal) minus gas transportation, and distribution and other post-wellhead costs. This market-clearing level at the wellhead has been estimated by analysts in and out of government at generally between 50 and 70% of the crude oil acquisition cost of refiners. The estimated market clearing price in 1985, under this rationale, would be between $3.20 and $4.50/MMBtu (in constant 1981 dollars) 8/ -- and §102 gas prices will be within that range by 1985, assuming that oil prices stay reasonably stable, i.e., the one percent increase above inflation that many analysts are using.

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[6] Approximately $15/barrel of oil equivalent in constant 1978 dollars.

[7] Approximately $31/barrel of oil equivalent.

The Effect of Escalator Clauses

Despite our conclusion that no fly-up will occur that is attributable to the NGPA pricing schedule, we are concerned that a serious fly-up will occur unless steps are taken to deal with indefinite price escalator clauses. Most of the adverse effects of decontrol under either the existing NGPA or total deregulation scenarios can be attributable to the effect of these indefinite escalator clauses. It should be noted, however, that total deregulation exacerbates the adverse effects of the indefinite escalators.

Fuel-indexed price escalators, which appear in about 10% of all interstate contracts, will prevent marketplace equilibrium

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8/ Estimated $37.30/bbl crude oil average refinery acquisition cost, adjusted by a Btu factor of 5.8 MMBtu/bbl, and a market-clearing level for gas of 50-70% of crude oil average acquisition cost.

from developing because the automatic price boosts do not stop when a market clearing price is reached. Instead, the fuel-indexed escalator clauses will -- upon decontrol -- force many wellhead prices far above the market clearing level. Specifically, many transactions would be tied to the energy equivalent price level of crude oil, No. 2 fuel oil, or various percentages -- often exceeding 100% -- of these indicators.

By raising prices artificially above their free-market level, indefinite escalators will cause substantial fuel-switching and increased oil imports as well as the obvious effect of raising prices. Total deregulation increases this effect by allowing more contracts subject to indefinite escalators to "trigger-up" to an artificially high price.

A study by Decision Analysis Corporation (DAC), made under contract to A.G.A. and based upon a sample of contracts between pipelines and producers, shows that approximately 67% of all contracts have one or more type of indefinite escalator clauses. In particular, 96% of all post-April 1977 contracts contain indefinite escalator clauses. Independent study results by E.I.A. agree closely with DAC as to the extent of indefinite escalator clauses. In this regard, NGPA §313(a) prohibits most-favored nation clauses from being triggered by deep gas prices but places no restraints on triggering by fuel-indexed clauses in contracts covering other types of gas which will be deregulated January, 1985. If the wellhead price of all the gas under most-favored nation clauses should rise to meet the level of fuel-indexed contract prices, end-user demand for gas would drop drastically. Gas could become uncompetitive in certain large markets that are essential to the gas industry for several reasons, including load balancing -- that is, spreading fixed costs over a large pool of users.

The A.G.A. study on escalator clauses, previously cited indicates that escalator clauses, if not legislatively defused, could result in severe economic effects. As a result of the activation of indefinite price escalator clauses alone -- exclusive of other factors -- a wealth transfer of 29 billion dollars from consumers to producers is expected to take place in the year 1985 under the NGPA, because national average wellhead gas prices under the NGPA would rise by 51% in real terms from 1984 to 1985. Under a total deregulation scenario, a wealth transfer of 52 billion dollars could be expected in 1985.

Although that money is paid by consumers to their local gas utility, the funds are in large part used to pay the wellhead price of gas. For example, in 1965 the wellhead price of gas constituted 25% of the average retail price. By 1980, the percentage had risen to nearly 50% -- and the portion of the consumer's bill attributable to the wellhead price could rise to nearly 80% in 1985 if old gas is decontrolled and escalators are not defused. Such increases will cause additional political pressure on state public utility commissions.

When these gas price increases induced by escalators are translated to the point of end-use, U.S. gas sales would decline significantly in 1985, with 1.4 Tcf less gas expected to be sold that year by gas utilities than in 1984 Under total deregulation, as much as 2.5 Tcf in gas sales would be lost. These losses would occur primarily in the industrial gas-using sector, since the industrial gas price resulting from indefinite escalators would be much higher than a free-market price. Most of the sales lost will be replaced by imported oil and some coal.

The average residential gas heating bill is projected to more than double from $390 in 1981 to $826 in 1985 inflated dollars.

Under a total deregulation scenario, this bill would soar to $977 in 1985 inflated dollars.

On the other hand, if indefinite price escalators are defused before 1985, average residential gas heating bills would rise from $400 in 1981 to $656 in 1985 in inflated dollars -- $170 less than the average residential bill projected in 1985 if indefinite price escalators remain in effect, under the existing NGPA, and $320 less than under the total deregulation scenario. (See Attachment 1).

Indefinite escalator clauses, if not defused, will also cause severe macroeconomic effects in 1985. A.G.A. projections, using the Wharton Econometric Forecasting Associates Annual Model, show that the activation of indefinite escalator clauses as compared to no activation of indefinite escalators would cause: prices as measured by the Gross National Product Deflator to rise 9.7 percent compared to 7.8 percent, production as measured by the Gross National Product to increase at a real rate of only 2.8 percent as compared to 4 percent, and a loss of 600,000 jobs. In short, the triggering of indefinite escalator clauses would shock the economy by increasing prices and unemployment while reducing Gross National Product.

The Effect on Oil Imports

Total deregulation in combination with activation of indefinite escalator clauses would increase oil imports by between 500,000 and 1 million barrels of oil a day in 1985 as compared with the NGPA with escalator clauses restrictions. As previously mentioned, the combination of indefinite price escalator clauses and total deregulation could result in a drop in U.S. gas sales of 2.5 Tcf between 1984 and 1985. Increased use of oil and some coal will largely be substituted.

The November 1981 DOE Report, "A Study of Alternatives to the Natural Gas Policy Act of 1978", DOE November 1981, reported that increasing gas prices will actually reduce oil imports. In order to reach this conclusion, the report starts with some assumptions with which we disagree -- most importantly, the DOE report assumes away the effect of indefinite escalator clauses that will raise prices far above a free-market level and, therefore, result in substantial fuel switching from gas to oil. While every analysis starts from a set of assumptions with which other people might disagree, A.G.A. believes that great caution should be taken in reviewing any report which states that total deregulation and resulting higher gas prices will lower oil imports -- especially when the report shows only marginal gains in gas production in 1985 and actual reduction compared with the

NGPA in 1990. The August 1981 EIA study previously cited, reaches the conclustion that deregulation of new gas only, as compared with total deregulation, results in lower prices and greater production after 1985 -- a result surely more conducive to reducing oil imports than higher prices and lower production.

Currently our nation is enjoying a respite from ever-increasing demands of on foreign oil. While we all hope that oil prices remain stable for the several years, it should be realized that old gas which remains subject to controls in 1985 is an important insurance policy to protect, to some extent, our industries and families from oil price shocks in the near future.

Another important protection against large increases in foreign oil prices is the newly developing synthetic fuels industry. In order to develop this industry, however, markets must be available.

We believe the most economic and promising synfuel is coal gasification. Since high-Btu coal gas will most likely be commingled with natural gas for delivery to traditional gas-users, any policy which adversely affects the marketability of natural gas will also likely hinder development of a viable coal gasification industry.

Conclusion

A.G.A. believes that natural gas will remain a vitally important source of domestically produced energy. The NGPA created the incentives necessary to encourage exploration and development of new gas fields. The NGPA will provide a smooth transition from 25 years of price controls to free market prics, so long as indefinite escalator clauses are legislatively defused. On the other hand, if indefinite price esclator clauses are not restricted and all gas is deregulated, gas prices will rise drastically -- increasing inflation, reducing employment, and, in general, shocking the economy without significantly increasing gas supplies. In addition, total deregulation and the activation of indefinite escalator clauses would increase oil imports.

A.G.A., therefore, urges the members of this Joint Committee to weigh carefully the adverse economic effects when considering any bill which accelerates sharply the deregulation of all gas wellhead prices and which does not effectively defuse indefinite escalator clauses.

ENERGY ANALYSIS

1981-13 November 6, 1981

CONSUMER IMPACT OF INDEFINITE GAS PRICE ESCALATOR CLAUSES UNDER ALTERNATIVE DECONTROL PLANS

A. Introduction

Over the past year, a number of proposals have surfaced that would accelerate decontrol of natural gas wellhead prices beyond the schedule currently mandated by the Natural Gas Policy Act of 1978 (NGPA). Associated with all new decontrol proposals, as well as with the NGPA, is the issue of "indefinite" price escalator clauses which now exist in some 67% of all gas purchase contracts, and in virtually all contracts written between gas producers and gas pipelines since the mid-1970's. As identified in the analysis entitled Analysis of Natural Gas Producer/Interstate Pipeline Contracts (prepared for A.G.A. by Decision Analysis Corporation, July 1981), these clauses generally require that, upon decontrol, wellhead gas prices must rise arbitrarily to, or a percentage above, some oil product price. At this time, several other studies -- including a U.S. Department of Energy survey -- are underway to amplify and broaden the data base on indefinite price escalator clauses in gas purchase contracts.

The purpose of this analysis is to project wellhead gas prices, sales, home heating costs, and consumer costs -- both under the NGPA (looked at in several ways) and under an accelerated decontrol alternative recently under discussion within the Administration that would phase out all wellhead price controls in three years -- incorporating the effects of indefinite price escalators using the most currently available information.

B. Executive Summary of Conclusions

This analysis concludes that, if activated by decontrol as now required by most gas purchase contracts, indefinite price escalator clauses -- unless prevented or delayed -- will force wellhead gas prices to exceed market levels (i.e., higher than the price that would otherwise be expected under free market conditions). Four cases were evaluated in this analysis:

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(1) NGPA (pessimistic) -- NGPA assuming that all indefinite price escalator clauses covering decontrolled gas are triggered in 1985 forcing wellhead gas prices to 110% of the price of distillate oil, and are never defused; i.e., no producer renegotiations take place during the 1980's despite demand losses.

(2) NGPA (central estimate) -- NGPA assuming, as above, that all indefinite price escalator clauses are triggered in 1985 for decontrolled gas, but they are all then gradually defused and made inoperative over the three year period from 1985-1988.

(3) NGPA (optimistic) -- NGPA assuming that the indefinite price escalators are not allowed to be triggered by decontrol in 1985.

(4) Three-year phaseout -- a "straight-line" phasing out of wellhead price controls on all natural gas, old and new, over the three year period from January 1, 1982 to January 1, 1985, at which time all gas prices are decontrolled.

Following are the major specific analysis conclusions for the four cases evaluated:

- As a result of the activation of indefinite price escalator clauses alone -- exclusive of other factors -- a wealth transfer of $29 to $52 billion dollars in the year 1985 is expected to take place under the NGPA and three-year phaseout cases, respectively, in 1985 actual dollars.

- With escalator clauses in effect at the time of decontrol in 1985, wellhead gas prices under the NGPA would rise by 51% in real terms from 1984-1985 for the national average (see NGPA-central estimate in Figure 1) forcing gas prices to be uncompetitive in the industrial market. This contrasts sharply with the seven percent rise in the average price of gas at the wellhead expected without price escalators, in real dollar terms (NGPA-optimistic case). This small level is anticipated because prices of gas subject to decontrol under the NGPA will already have neared market clearing levels prior to 1985 because of declining volumes of less-costly old gas.

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- In addition, regional differences caused by escalator clauses under the NGPA (central estimate) would be especially severe, with the worst region's average wellhead gas supply price 38% more than that of the best region in 1985. These findings -- i.e., the imbalances caused by escalator clauses under NGPA in 1985 and beyond -- raise concern that pipeline system differences would also be severe.

- One possible consequence of this uncompetitive and imbalanced gas market, caused by triggering of indefinite price escalators after decontrol, would be that regulators at all levels might feel compelled to attempt to control such rapidly increasing and uneven gas prices, causing severe financial hardships to some gas companies. Although financial impacts from such regulatory or other institutional factors can be anticipated, no attempt is made to quantify them in this analysis.

- Under a three-year phaseout of all wellhead gas price controls by 1985, the national average wellhead gas price would rise by 64% in real terms from 1984 to 1985, assuming that all indefinite escalator clauses which are in effect in 1985 are triggered by decontrol as required by gas purchase contracts.

- When these gas price increases induced by escalators are translated to the point of end-use, U.S. gas sales would decline significantly in 1985, with 1.4 to 2.5 Tcf less gas expected to be sold that year by gas utilities than in 1984, for the NGPA and the three-year phaseout cases, respectively (see Figure 2). This reduction in gas sales would be partially recovered throughout the remainder of the 1980's assuming escalator clauses are fully defused over the three-year period from January 1, 1985 to January 1, 1988. These losses would occur primarily in the industrial gas-using sector.

- If indefinite price escalators are unchecked, the average residential gas heating bill is projected to more than double from under $400 in 1981 to $826 in 1985 inflated dollars under the NGPA (central estimate) -- a real-dollar rise from 1981 to 1985 of 54% to $600 in 1981 dollars -- and under the three-year phaseout to rise by 150% to $977 in 1985 inflated

Figure 1
ESTIMATED WELLHEAD GAS PRICES UNDER NGPA COMPARED WITH THREE-YEAR PHASEOUT
(constant 1981 dollars per MMBtu)

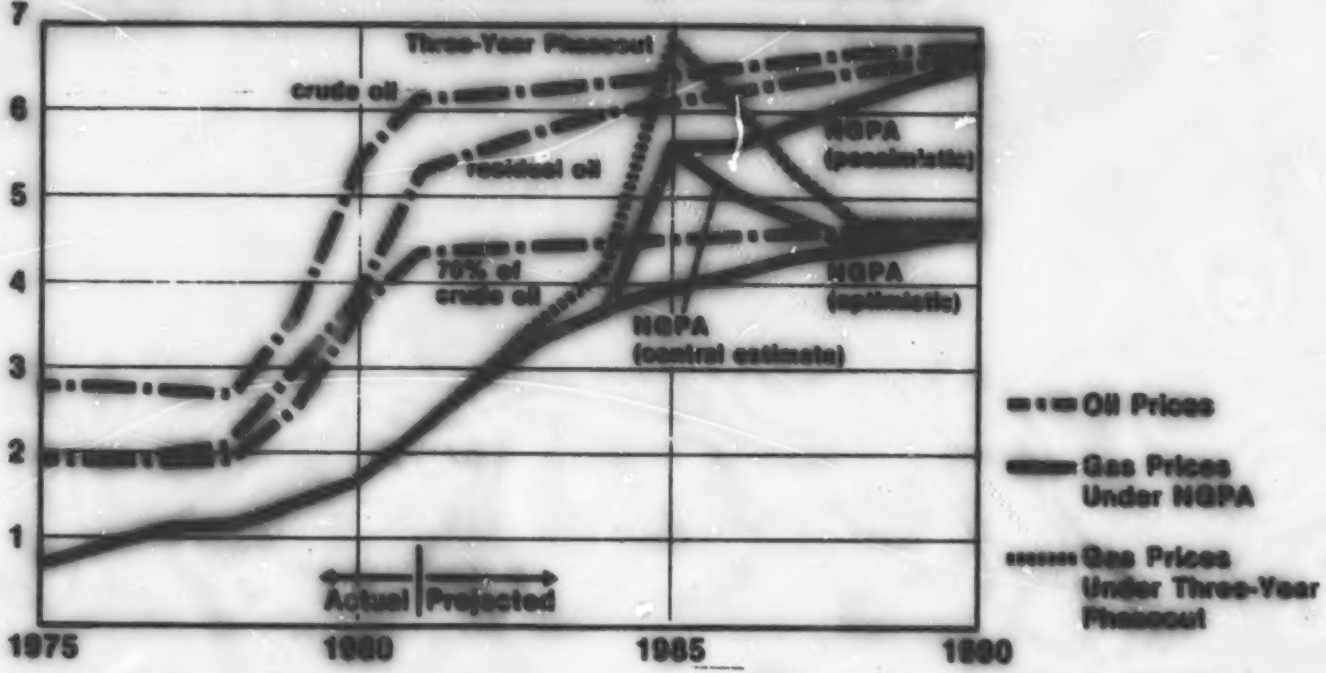


Figure 2

HISTORICAL AND PROJECTED GAS SALES BY U.S. GAS UTILITIES — TRADITIONAL MARKETS ONLY

(quadrillion Btus per year)

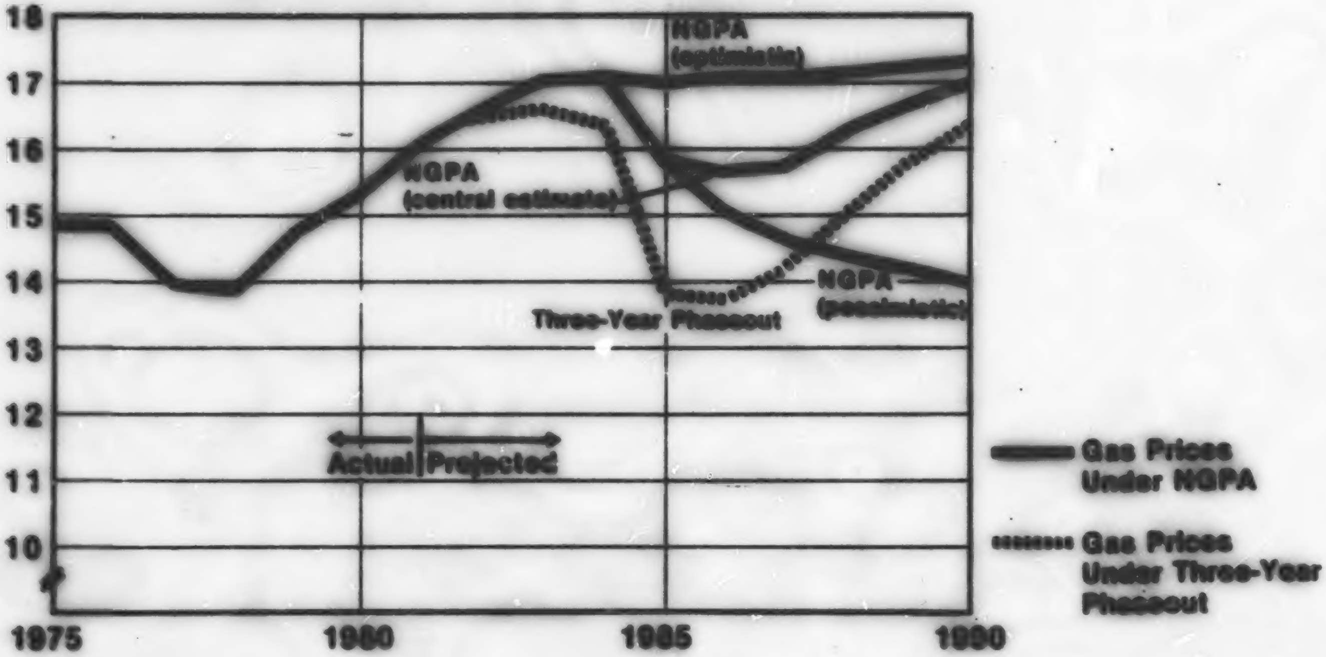


Figure 3

ESTIMATED AVERAGE U.S. RESIDENTIAL HEATING BILLS

(constant 1981 dollars per year)

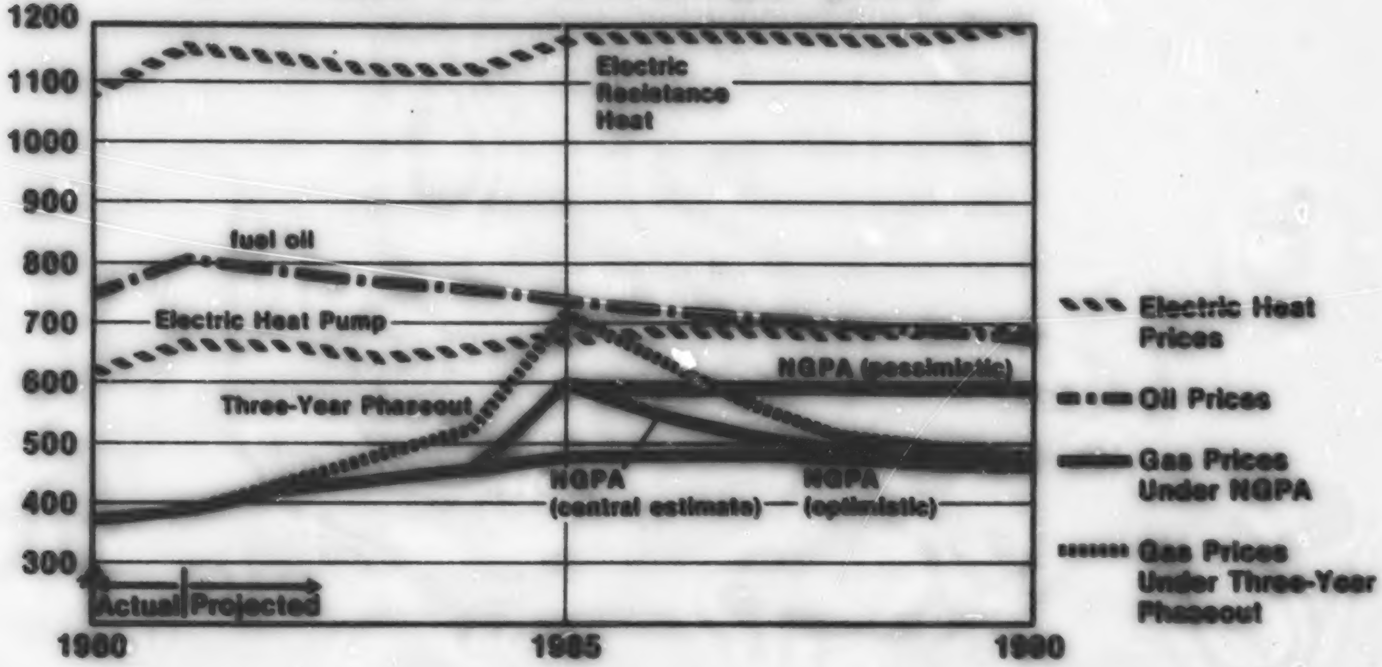
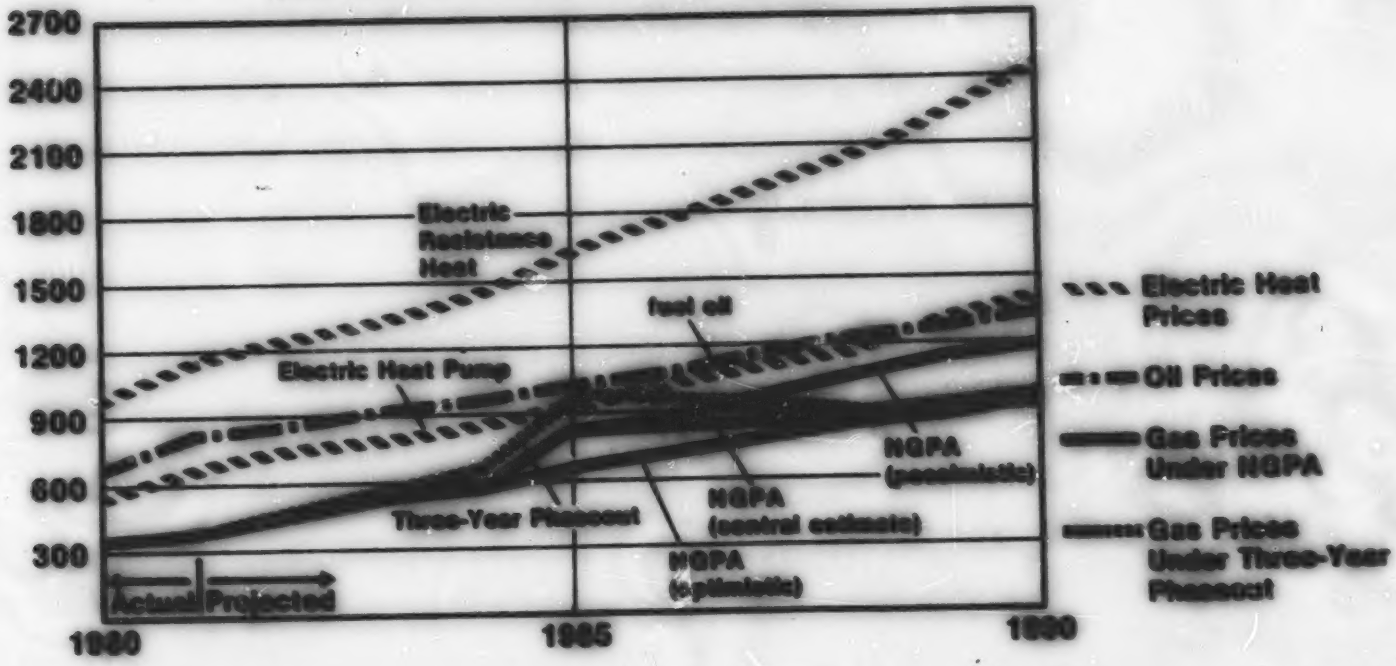


Figure 4

ESTIMATED AVERAGE U.S. RESIDENTIAL HEATING BILLS

(inflated dollars per year)



dollars (or a real 82% increase to $710). On the other hand, if indefinite price escalators are defused before 1985, residential gas heating bills would rise to $656 per year, a 68% increase over four years, in 1985 inflated dollars (or a real 22% increase over the four-year period to 1985). (See Figures 3 and 4.)

- In spite of these increases, natural gas is expected to remain the best buy for home heating for most residential users. For example, in 1985 under the NGPA-central estimate, the fuel cost for gas heat would be 81% of the cost of oil for space heat, and 88% of the average cost of electricity for heating with electric heat pumps.

C. Background

The wellhead price of interstate natural gas has been federally regulated since 1954. In 1978, the Natural Gas Policy Act (NGPA) extended price controls to intrastate gas and established a multi-tiered pricing structure for gas produced and sold under different geologic and contractual conditions. Under the NGPA, certain "high cost" gas has been deregulated since late 1979. In addition, all gas discovered after April 20, 1977 as well as most intrastate gas will be decontrolled as early as January 1, 1985. Price controls will remain on "old" (pre-1977) interstate gas as well as on small quantities of production from other categories until these vintages are depleted. Thus, some 64% of all domestically produced natural gas is scheduled to be decontrolled by 1985 under the NGPA within the gas utility market.

There is ample evidence that the NGPA is generally working well in the supply area, and in particular is achieving its goal of moving gas exploration and development into the frontier areas which hold 60%-70% of the potential natural gas resource. However, certain problems have developed since the NGPA was enacted that may complicate the transition to partial decontrol in 1985. A recent A.G.A.-sponsored analysis by Decision Analysis Corporation[1] revealed the existence of indefinite price escalator clauses in 67% of all interstate gas purchase contracts and in 96% of contracts filed since April 20, 1977. Under some of these contracts, the gas price would rise upon a market clearing level higher than parity with #2 fuel oil -- far above a market clearing level for gas. Most other contracts with indefinite escalator clauses contain "most favored nation" provisions, requiring the decontrolled price to equal the highest prevailing price in the region. It should be noted that most of the indefinite escalators were agreed to prior to the doubling of world oil prices that occurred over the 1979-80 period. Since that time many gas purchase contracts have begun to include buyer-recourse provisions as well (i.e., market-kickout clauses) enabling pipelines to reject gas volumes that are too costly for the marketplace.

For all practical purposes, however, the combined effect of these indefinite escalator provisions would be to increase most decontrolled gas prices to about 110% of parity with #2 fuel oil. This raises the specter of a severe price spike with total decontrol and a lesser spike in 1985 under NGPA's partial decontrol. Supra-equilibrium *average* prices could exist for several years until contracts expire or are renegotiated, unless the indefinite escalators are defused.

This problem is compounded by the fact that disparities are expected among regions and among distribution systems because gas remaining under controls will not be evenly distributed. Some regions and some distribution systems will have very little access to low cost gas, so that the average wellhead price in these regions will be much higher than in regions with larger amounts of old gas remaining under price controls. In addition, some observers fear that companies with access to larger amounts of old gas may be financially able to bid the price of new gas above competitive levels before reaching a price at which the *average* wellhead price (averaged over both new and old gas) clears the market. This means that companies with little or no old gas to cushion the effect of the bid-up of new gas prices would be at a competitive disadvantage vis-a-vis other gas distribution systems as well as competing fuels. However, since only 36% of flowing gas in the gas utility market is likely to remain under wellhead price controls by 1985, this bidding disparity problem does not appear to be a significant factor.

Finally, concern has been raised frequently over the fact that the pre-1985 gas prices established under the NGPA were keyed to an assumed world oil price much lower than the price that now prevails. This raises the possibility that gas prices will jump sharply to some kind of oil parity upon decontrol in 1985. Once the escalator problem has been corrected, evidence indicates that this effect may not be severe. A study of gas rate changes under NGPA by Edmund R. duPont and Associates, entitled *Preliminary Assessment of Gas Rate Changes Under NGPA* (June 1981), revealed that significant quantities of gas have been reclassified by producers from lower priced NGPA categories to higher-priced categories over the past two years.[2] This result implies that gas prices are rising, and will rise, more rapidly under the NGPA than had originally been expected, so that the gap between gas prices immediately before decontrol and the 1985 market clearing price will not be as great as some have suggested.

D. Methodology and Assumptions

Cases Analyzed

To evaluate the possible impacts of escalator clauses, the following cases were considered:

- NGPA. Title I of the Natural Gas Policy Act of 1978 (NGPA) continues price controls until 1985 on most gas from wells spudded after April 1977, except for limited deregulated volumes. Three variations of the NGPA were analyzed. Two of these variations assumed that contract escalation clauses requiring significant price increases would be triggered in 1985, as the NGPA would then permit, for all gas decontrolled under NGPA on that date.

  - A pessimistic case was evaluated under the assumption that current price escalator clauses remain in effect and are never renegotiated, driving long-term wellhead gas prices above market levels and keeping them there indefinitely.

  - A central estimate case assumed these clauses are renegotiated over the three years between 1985-1988.

  - An optimistic case assumed that these clauses are eliminated by 1985, and that the average deregulated gas price in 1985 will be the 1990 "equilibrium" value in constant dollars.

- Three-year phaseout. A proposal to phase out wellhead price controls on all natural gas over the 36-month period from January 1, 1982 to January 1, 1985 was evaluated as it currently stands -- with no limitations on the activation of contract escalator clauses upon decontrol in 1985. With all gas categories being decontrolled by 1985, most favored nation clauses were assumed to trigger 60% of all gas volumes to 110% of the price of No. 2 fuel oil. Prior to 1985, all gas categories would move uniformly toward a target point of 70% of crude oil, resulting in a uniform natural gas price on the eve of decontrol. Per the proposal as it now stands, gas from wells spudded after January 1, 1982 would be allowed this target price immediately and Section 107 gas would continue to be decontrolled.

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Major Assumptions

- Oil prices. Crude oil prices were assumed to rise by 1% per year in real dollars from actual 1981 levels. On this basis, Figure 1 shows projected world crude oil prices, 70% of crude oil, and delivered industrial (national average wholesale) residual fuel oil prices from 1975-1990. In line with current oil industry projections, as well as with an earlier A.G.A. analysis of refinery upgrade,[3] residual oil prices are projected to catch up gradually to crude through the 1980's (see also Table 1).

- Supply/demand equilibrium. In order to expedite analysis, the level of 70% of crude oil was used as a surrogate for a competitive (market clearing) wellhead gas price in 1985. The U.S. Department of Energy independently arrived at the 70% level for the 1985 equilibrium in its recent deregulation analysis.[4] This wellhead gas price level, plus the cost of gas transmission and distribution, roughly approximates the national average delivered price of residual fuel to large industrial customers at the present time.

- Indefinite gas price escalation clauses. All gas decontrolled under NGPA in 1985 subject to most-favored nation clauses was assumed to rise to 110% of the price of No. 2 distillate fuel oil. (Gas decontrolled before 1985 under NGPA was assumed to be priced at 110% of distillate from 1982 forward.) For the three-year phaseout case, 60% of gas was assumed to be subject to effective price escalation clauses, and thereby rise in 1985 to 110% of distillate oil. The 60% proportion was derived from the July 1981 Decision Analysis Corporation study referenced previously, which found that 67% of all interstate gas contracts contained indefinite price escalator clauses. Of these, approximately 10% (or 7% of all contracts) contained escape clauses based on non-marketability at the escalated price. For the NGPA cases with escalators, 78% of the decontrolled gas was assumed to be subject to effective price escalation clauses and thereby priced at 110% of distillate oil in 1985. The 78% proportion was derived from the above study which found that 96% of deregulated gas contracts contained indefinite escalators and 19% of these have marketability escape clauses.

Table 1

ASSUMED REFERENCE OIL PRICES[1/]
1975-1990

Year	Crude Oil		Industrial Residual Oil		Bulk Distillate Oil	
	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu
1975	2.75	1.79	1.89	1.23	3.18	2.07
1976	2.75	1.88	1.89	1.29	3.16	2.16
1977	2.73	1.98	1.99	1.44	3.20	2.32
1978	2.69	2.09	2.09	1.62	3.22	2.50
1979	3.53	2.99	2.99	2.53	4.11	3.48
1980	5.38	4.88	3.81	3.46	6.10	5.53
1981	6.20	6.20	5.27	5.27	7.49	7.49
1982	6.25	6.84	5.53	6.06	7.56	8.28
1983	6.32	7.48	5.76	6.82	7.63	9.03
1984	6.37	8.13	5.95	7.59	7.70	9.83
1985	6.43	8.85	6.11	8.41	7.77	10.[illegible]
1986	6.49	9.69	6.24	9.32	7.84	11.71
1987	6.55	10.64	6.36	10.34	7.92	12.87
1988	6.61	11.58	6.46	11.32	7.98	13.98
1989	6.67	12.59	6.56	12.39	8.07	15.24
1990	6.73	13.66	6.64	13.48	8.13	16.50

[1/] Oil prices vary slightly among cases. Prices are shown are for NGPA (central estimate) Case.

Note: 1981 dollar prices are prices in dollars of constant purchasing power, and reflect only the cost of fuel beyond general inflation. Inflated dollar prices reflect a general decline in the purchasing power of the dollar as measured by the GNP deflator.

- Gas price redeterminations. The reclassification of old Section 104 gas into the higher priced Section 103 category, as quantified in the analysis prepared for A.G.A. entitled Preliminary Assessment of Gas Rate Changes Under NGPA,[5] was assumed to continue out to 1985 in all cases, but at a slower rate.

- Gas demand constraints. NGPA incremental pricing and all remaining gas demand constraints in the Fuel Use Act were assumed to be repealed as of January 1, 1982.

- Take-or-pay contract provisions. If excess gas deliverability (more supply than demand) existed in any year, in any case considered in the analysis, volumes were rejected pro-rata across all gas price categories to capture minimum bill requirements prevalent in most gas contracts. Note: most other studies reject excess gas on the basis of theoretical "supply curve" economics -- i.e., the highest priced gas is turned back first despite take-or-pay requirements -- rather than taking into account existing take-or-pay requirements.

Methodology

- Projected gas prices and sales. A.G.A.'s Total Energy Resource Analysis model (TERA) was used extensively as the main frame analysis tool in this study. Retail natural gas prices and utility industry natural gas sales were read directly from TERA model projections utilizing the assumptions listed in the previous section of this report. TERA is a publicly available energy supply-demand system of simulation models developed and refined by the American Gas Association over the past ten years. Detailed model documentation is available from the American Gas Association.[6]

- Projected annual residential gas heating bills. Projected residential heating bills under each scenario were derived as follows:

  1. National average residential gas bills for space heating were derived by multiplying TERA residential sector gas prices by TERA residential sector space heating consumption levels per residence.[7]

2. In projecting consumption per family, a price elasticity of -0.4 was assumed (reflecting conservation, equipment efficiency), as was an income elasticity of +0.9. Other assumptions which influence residential conservation are average lifespans of 50 years for houses and 25 years for furnaces. These assumptions lead to average declines in heating fuel use per family of 14% by 1985 and 26% by 1990 for gas, oil and electricity relative to a 1980 estimate of 91.7 MMBtu (gas), 97.7 MMBtu (#2 fuel oil), 68.8 MMBtu (electric resistance) and 39.7 MMBtu (electric heat pump).

3. National average oil and electricity consumption per residential unit for space heating were derived from TERA per-unit gas consumption projections by multiplying by the ratio 65/61 for oil, 65/98 for electric resistance, and 65/170 for electric heat pump to reflect relative efficiencies of existing space heating stock. It should be noted that the space heating efficiency of the electric heat pump may be overstated compared to the average of existing heat pumps stock.[8] It should also be noted that in order to correct for the cumulative penetration of heat pump into the electric space heating stock by 1980, electric figures were derived using a 1976 base year.

4. National average residential space heating bills for oil and electric heated homes were derived by multiplying the TERA residential sector No. 2 distillate (home heating) oil and residential electric prices by the per unit energy consumption from Step A3.

- Total Direct Cost (Wealth Transfer). Total direct cost of gas was derived by multiplying total gas sales (direct sales plus sales through utilities, but excluding supplemental sources of gas such as imports) by the average wellhead price as forecast by the TERA model for each scenario.

E. Results and Conclusions

The impacts of indefinite gas price escalator clauses on wellhead prices, retail prices, utility gas sales, residential heating bills and total consumer gas costs under each case are summarized below.

Wellhead Prices

Under the NGPA (central estimate), indefinite escalators would prevent a smooth transition to market clearing when new gas is decontrolled in 1985, resulting in an increase of 51% in real terms in the national average wellhead price of gas between 1984 and 1985 -- from $3.68 MMBtu to $5.56/MMBtu, and $2.25/MMBtu to $6.56/MMBtu (constant 1981 dollars) between 1981 and 1990 (pessimistic case), still below the projected 1990 industrial residual oil price of $6.64/MMBtu, but well above the estimated gas market "clearing" wellhead price in that year of $4.71/MMBtu (see Figure 1 and Table 2). Some regions and transmission systems would bear much larger impacts than the national average.

Under the three-year phaseout decontrol proposal the average wellhead gas price would increase to $4.22/MMBtu in 1984 (1981 constant dollars) before rising by 64% to $6.93/MMBtu in 1985.

Retail Prices

Retail prices, shown in Table 3, follow a pattern similar to that of wellhead prices in each case. While the impact of price escalators at the end-use level is less severe than at the wellhead (because of the inclusion of transmission and distribution costs in the retail price), the impact is nevertheless significant. Under the NGPA, retail gas prices to all sectors increases by an average of 31% in real terms in 1985. Under the three-year phaseout case, the 1985 price increase averages 47% across all sectors, and ranges between 40% in the residential sector and 50% for power plants. Moreover, the wellhead price accounts for an increasing proportion of the retail price, rising from 49% of the average retail price in 1980 to 83% in 1985 under the NGPA.

It should also be noted that retail gas prices under the NGPA (optimistic case) remain below the price of competing fuel oils (shown in Table 1) -- i.e., the industrial gas price is lower than the price of residual fuel oil. The NGPA (central estimate case) industrial gas price may be uncompetitive with industrial residual oil for two years following new gas decontrol as a result of indefinite price escalators. Under the three-year phaseout case, however, as well as the NGPA (pessimistic case), the gas price rises above the competitive fuel oil price during the years in which price escalator clauses are in effect.

Table 2

HISTORICAL AND PROJECTED U.S. AVERAGE WELLHEAD GAS PRICE
1975-1990

Year	NGPA (central estimate)		NGPA (optimistic)		NGPA (pessimistic)		Three-Year Phaseout	
	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu
1975	.69	.45	-	-	-	-	-	-
1976	.86	.59	-	-	-	-	-	-
1977	1.12	.81	-	-	-	-	-	-
1978	1.18	.92	-	-	-	-	-	-
1979	1.38	1.17	-	-	-	-	-	-
1980	1.69	1.53	-	-	-	-	-	-
1981	2.25	2.25	-	-	-	-	-	-
1982	2.83	3.10	2.83	3.10	2.83	3.10	2.96	3.24
1983	3.30	3.91	3.30	3.91	3.30	3.91	3.59	4.25
1984	3.68	4.69	3.68	4.69	3.68	4.69	4.22	5.39
1985	5.56	7.66	3.94	5.43	5.56	7.66	6.93	9.54
1986	5.06	7.56	4.13	6.17	5.57	8.31	6.10	9.10
1987	4.76	7.73	4.29	6.96	5.85	9.50	5.33	8.66
1988	4.48	7.84	4.42	7.75	6.14	10.76	4.69	8.22
1989	4.55	8.59	4.53	8.54	6.36	12.01	4.71	8.88
1990	4.61	9.36	4.63	9.39	6.56	13.30	4.71	9.56

Sources: 1975-1980: Gas Facts 1980 (Arlington, VA; American Gas Association, 1981).

1981-1990 based on TERA simulations:
NGPA (central estimate) - scenario DM8141m (11/2/81)
NGPA (optimistic) - scenario DM8163m (11/2/81)
NGPA (pessimistic) - scenario DM8154m (11/2/81)
Three-Year Phaseout - scenario DM8153m (11/2/81)

Note: 1981 dollar prices are prices in dollars of constant purchasing power, and reflect only the cost of fuel beyond general inflation. Inflated dollar prices reflect a general decline in the purchasing power of the dollar as measured by the GNP deflator.

Table 3

HISTORICAL AND PROJECTED U.S. AVERAGE RETAIL
GAS PRICE BY SECTOR
1975-1990

Year	Residential							
	NGPA (central estimate)		NGPA (optimistic)		NGPA (pessimistic)		Three Year Phaseout	
	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu
1975	2.60	1.69	-	-	-	-	-	-
1976	2.89	1.98	-	-	-	-	-	-
1977	3.21	2.33	-	-	-	-	-	-
1978	3.26	2.53	-	-	-	-	-	-
1979	3.45	2.92	-	-	-	-	-	-
1980	3.98	3.61	-	-	-	-	-	-
1981	4.37	4.37	-	-	-	-	-	-
1982	4.88	5.35	4.88	5.35	4.88	5.35	5.12	5.61
1983	5.25	6.21	5.25	6.21	5.25	6.21	5.72	6.78
1984	5.59	7.13	5.59	7.13	5.59	7.13	6.38	8.14
1985	7.22	9.95	6.00	8.26	7.22	9.95	8.96	12.34
1986	7.12	10.62	6.22	9.28	7.63	11.40	8.30	12.39
1987	6.91	11.22	6.41	10.41	7.95	12.92	7.64	12.42
1988	6.69	11.72	6.58	11.53	8.25	14.47	7.06	12.37
1989	6.78	12.80	6.70	12.66	8.47	15.98	7.06	13.33
1990	6.85	13.91	6.83	13.86	8.65	17.57	7.07	14.35

Year	Commercial							
	NGPA (central estimate)		NGPA (optimistic)		NGPA (pessimistic)		Three Year Phaseout	
	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu
1975	2.12	1.38	-	-	-	-	-	-
1976	2.46	1.68	-	-	-	-	-	-
1977	2.86	2.07	-	-	-	-	-	-
1978	2.93	2.28	-	-	-	-	-	-
1979	3.14	2.66	-	-	-	-	-	-
1980	3.68	3.34	-	-	-	-	-	-
1981	3.70	3.70	-	-	-	-	-	-
1982	4.23	4.64	4.23	4.64	4.23	4.64	4.42	4.84
1983	4.62	5.47	4.62	5.47	4.62	5.47	5.00	5.93
1984	4.96	6.33	4.96	6.33	4.96	6.33	5.64	7.19
1985	6.52	8.98	5.27	7.25	6.52	8.98	8.24	11.35
1986	6.38	9.53	5.46	8.15	6.91	10.32	7.55	11.28
1987	6.14	9.98	5.63	9.14	7.21	11.71	6.86	11.14
1988	5.88	10.31	5.77	10.11	7.48	13.11	6.24	10.94
1989	5.95	11.22	5.87	11.09	7.66	14.47	6.21	11.72
1990	5.99	12.17	5.98	12.13	7.82	15.88	6.19	12.36

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Table 3
Continued

HISTORICAL AND PROJECTED U.S. AVERAGE RETAIL GAS PRICE BY SECTOR
1975-1990

Year	Industrial							
	NGPA (central estimate)		NGPA (optimistic)		NGPA (pessimistic)		Three Year Phaseout	
	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu
1975	1.52	.99	-	-	-	-	-	-
1976	1.93	1.32	-	-	-	-	-	-
1977	2.34	1.70	-	-	-	-	-	-
1978	2.46	1.91	-	-	-	-	-	-
1979	2.64	2.24	-	-	-	-	-	-
1980	3.10	2.81	-	-	-	-	-	-
1981	3.53	3.53	-	-	-	-	-	-
1982	4.02	4.40	4.02	4.40	4.02	4.40	-	-
1983	4.48	5.30	4.48	5.30	4.48	5.30	4.11	4.50
1984	4.85	6.19	4.85	6.19	4.85	6.19	4.72	5.58
1985	6.38	8.79	5.09	7.01	6.38	8.79	5.34	6.82
1986	6.23	9.30	5.29	7.90	6.77	10.10	7.95	10.95
1987	5.98	9.72	5.46	8.87	7.08	11.50	7.25	10.82
1988	5.71	10.01	5.61	9.83	7.37	12.91	6.56	10.66
1989	5.79	10.92	5.72	10.79	7.57	14.29	5.96	10.44
1990	5.84	11.86	5.81	11.81	7.74	15.72	5.95	11.23
							5.95	12.09

Year	Powerplant							
	NGPA (central estimate)		NGPA (optimistic)		NGPA (pessimistic)		Three Year Phaseout	
	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu	Constant $1981/MMBtu	Inflated $/MMBtu
1975	.56	.86	-	-	-	-	-	-
1976	.86	1.26	-	-	-	-	-	-
1977	1.19	1.65	-	-	-	-	-	-
1978	1.38	1.78	-	-	-	-	-	-
1979	1.84	2.18	-	-	-	-	-	-
1980	2.98	2.70	-	-	-	-	-	-
1981	3.08	3.08	-	-	-	-	-	-
1982	3.85	4.21	3.85	4.21	3.85	4.21	-	-
1983	4.45	5.28	4.45	5.28	4.46	5.28	3.75	4.11
1984	4.94	6.30	4.94	6.30	4.94	6.30	4.33	5.11
1985	6.42	8.83	4.87	6.71	6.41	8.83	4.92	6.27
1986	6.12	9.14	5.03	7.51	6.77	10.10	7.40	10.19
1987	5.73	9.31	5.16	8.38	7.02	11.40	6.60	9.85
1988	5.36	9.40	5.27	9.23	7.25	12.71	5.89	9.56
1989	5.41	10.21	5.35	10.10	7.42	14.00	5.32	9.32
1990	5.43	11.03	5.43	11.03	7.52	15.26	5.36	10.12
							5.38	10.92

Table 4

HISTORICAL AND PROJECTED UTILITY GAS SALES BY SECTOR
1975-1990
(Quadrillion Btu's)1/

	Residential/Commercial				Industrial/Powerplant				Total			
Year	NGPA (central estimate)	NGPA (optimistic)	NGPA (pessimistic)	3-Year Phase-out	NGPA (central estimate)	NGPA (optimistic)	NGPA (pessimistic)	3-Year Phase-out	NGPA (central estimate)	NGPA (optimistic)	NGPA (pessimistic)	3-Year Phase-out
1975	7.6	-	-	-	7.2	-	-	-	14.8	-	-	-
1976	7.9	-	-	-	6.9	-	-	-	14.8	-	-	-
1977	7.7	-	-	-	6.3	-	-	-	14.0	-	-	-
1978	7.6	-	-	-	6.2	-	-	-	13.8	-	-	-
1979	7.8	-	-	-	7.0	-	-	-	14.8	-	-	-
1980	7.3	-	-	-	8.1	-	-	-	15.4	-	-	-
1981	7.9	-	-	-	8.3	-	-	-	16.2	-	-	-
1982	8.0	8.0	8.0	8.0	8.6	8.6	8.6	8.5	16.6	16.6	16.6	16.5
1983	8.0	8.0	8.0	8.0	9.0	9.0	9.0	8.6	17.0	17.0	17.0	16.6
1984	8.1	8.1	8.1	8.0	9.0	9.0	9.0	8.4	17.1	17.1	17.1	16.4
1985	8.1	8.1	8.1	8.0	7.6	8.9	7.6	5.9	15.7	17.0	15.7	13.9
1986	8.1	8.1	8.0	7.9	7.5	9.0	7.0	5.8	15.6	17.1	15.0	13.7
1987	8.1	8.2	8.0	7.9	7.6	8.9	6.6	6.3	15.7	17.1	14.6	14.2
1988	8.1	8.2	8.0	7.9	8.2	9.0	6.3	7.2	16.3	17.2	14.3	15.1
1989	8.1	8.2	8.0	7.9	8.6	9.1	6.2	7.9	16.7	17.3	14.2	15.8
1990	8.1	8.2	7.9	7.9	8.9	9.2	6.1	8.4	17.0	17.4	14.0	16.3

Sources: 1975-1980: Gas Facts 1980 (Arlington, VA, American Gas Association, 1981). 1981-1990 based on TERA simulations.

1/ 1 cubic foot of gas assumed to contain 1021 btu.

Table 5

ESTIMATED ANNUAL NATIONAL AVERAGE RESIDENTIAL HEATING BILL

	Gas[1][2]								No. 2 Fuel Oil[1][3]		Electric Resistance Heat[4]		Electric Heat Pump[5]	
	NGPA (central estimate)		NGPA (optimistic)		NGPA (pessimistic)		Three-Year Phaseout							
Year	Constant $1981	Inflated $	Constant $1981	Inflated $	Constant $1981	Inflated $	Constant $1981	Inflated $	Constant $1981	Inflated $	Constant $1981	Inflated $	Constant $1981	Inflated $
1980	373	338	-	-	-	-	-	-	753	683	1074	974	620	562
1981	390	390	390	390	390	390	390	390	806	806	1163	1163	670	670
1982	423	464	423	464	423	464	444	486	791	866	1142	1250	658	721
1983	443	524	443	524	443	524	482	571	776	919	1121	1327	646	765
1984	457	583	457	583	457	583	521	664	759	969	1127	1438	650	829
1985	600	826	476	656	600	826	710	977	744	1024	1176	1620	678	934
1986	548	818	479	715	588	878	637	950	727	1086	1181	1763	681	1016
1987	515	837	479	778	593	964	568	923	712	1157	1180	1918	681	1106
1988	484	847	477	836	596	1046	508	889	696	1220	1171	2052	675	1183
1989	476	899	472	891	594	1120	492	929	681	1286	1186	2239	684	1291
1990	466	947	466	947	587	1193	478	970	668	1356	1198	2433	691	1403

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[1] Average of all heating appliances in place; includes the effects of all conservation measures including thermostat turndowns, increased insulation, increasing market penetration of new technologies, etc.

[2] Average efficiency of gas heating appliances assumed to be 65%.

[3] Average efficiency of oil heating appliances assumed to be 61%.

[4] Average efficiency of electric resistance heating units assumed to be 98%.

[5] Average efficiency of electric heat pumps assumed to be 170%.

Note: 1981 dollar prices are prices in dollars of constant purchasing power, and reflect only the cost of fuel beyond general inflation. Inflated dollar prices reflect a general decline in the purchasing power of the dollar as measured by the GNP deflator.

Preliminary figures for 1980 gas consumption per family from A.G.A.'s Gas Househeating Survey 1980 shows slightly lower consumption than TERA. Therefore, this analysis may slightly overestimate gas bills.

Total Direct Cost

Table 6 gives the estimated total real cost of gas produced under each decontrol alternative. These estimates show that, notwithstanding the significant decline in sales shown in Figure 2, the total cost of gas to all consuming sectors increases substantially in real terms during 1981-1990. As a result of the activation of indefinite price escalator clauses alone -- exclusive of other factors -- a wealth transfer of $29 to $52 billion dollars in the year 1985 is expected to take place under the NGPA and three-year phaseout cases, respectively, in 1985 actual dollars.

Table 6

PROJECTED DIRECT COST OF GAS
1981-1990
(Billions of Constant $1981)

Year	NGPA (central estimate)	NGPA (optimistic)	NGPA (pessimistic)	Three-Year Phaseout[1]
1981	41.4	-	-	-
1982	52.6	52.6	52.6	54.8
1983	62.4	62.4	62.4	66.4
1984	68.8	68.8	68.8	76.0
1985	94.0	73.3	94.0	107.4
1986	86.5	76.8	89.1	92.7
1987	80.9	78.9	89.5	82.6
1988	78.0	80.9	90.3	76.0
1989	79.6	82.0	90.3	78.2
1990	81.1	83.3	89.9	79.6

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[1] In a Three-Year Phaseout case with no escalators (i.e., with the wellhead price equivalent to 70% of the crude oil price in 1985) the estimated direct cost would be $69.7 billion, or $37.7 billion (constant $1981) less than in the case with escalators.

Note: 1981 dollar prices are in dollars of constant purchasing power, and reflect only the cost of fuel beyond general inflation. Inflated dollar prices reflect a general decline in the purchasing power of the dollar as measured by the GNP deflator.

Footnotes

1/Analysis of Natural Gas Producer/Interstate Pipeline Contracts (Annandale, VA, Decision Analysis Corporation, July 1, 1981).

2/Preliminary Assessment of Gas Rate Changes Under NGPA (Washington, DC, Edmond R. DuPont & Associates, June 26, 1981).

3/An Analysis of Potential for Upgrading Domestic Regining Capacity (Dallas, TX, Purvin & Gertz, Inc.; March, 1980).

4/Additional Natural Gas Decontrol Analysis, U.S. Department of Energy, Office of Planning, Policy and Analysis, July 22, 1981 draft attached to July 30, 1981 White House memorandum from D. Boggs to the President.

5/Edmund R. DuPont & Associates, op.cit.

6/Energy Modeling Services Department, American Gas Association, 1515 Wilson Blvd., Arlington, VA 22209

7/Preliminary figures for 1980 gas consumption per family for A.G.A.'s Gas Househeating Survey 1980 show slightly lower consumption than that shown in TERA. Therefore, this analysis may slightly overestimate consumption.

8/A high efficiency heat pump with a coefficient of performance of 2.75 was the assumed residential heating device in this analysis. The C.O.P. reflects the efficiency achievable at a constant temperature and steady-state operation. Actual performance of the heat pump, however, varies as a result of climatological differences. Oak Ridge National Laboratory has estimated the seasonal performance factor of a heat pump with a C.O.P. of 2.75 in each of 115 cities throughout the country. A representative major city was chosen from each of the nine census regions, and the performance factor estimated by Oak Ridge was assumed to apply to that region -- ranging from 1.52 in Chicago and Portland to 2.1 in Oakland. The national average is the average of each region weighted by the number of households in that region.

Appendix A-1

PROJECTED AVERAGE WELLHEAD NATURAL GAS ACQUISITION PRICE BY CENSUS REGION[1/]

1981-1990
(Inflated $/MMBtu)

Census Regions	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
New England										
NGPA (central estimate)	2.43	3.03	3.57	4.17	7.95	7.78	7.89	8.03	8.82	9.58
NGPA (optimistic)		3.03	3.57	4.17	5.71	6.44	7.22	8.08	8.79	9.63
NGPA (pessimistic)		3.03	3.57	4.17	7.95	8.76	9.95	11.18	12.16	13.70
Three-Year Phaseout		3.44	4.36	5.43	9.54	9.10	8.66	8.22	8.88	9.56
Mid Atlantic										
NGPA (central estimate)	2.40	3.04	3.52	4.07	7.73	7.48	7.63	7.71	8.46	9.21
NGPA (optimistic)		3.04	3.52	4.07	5.44	6.15	6.91	7.67	8.45	9.28
NGPA (pessimistic)		3.04	3.52	4.07	7.73	8.28	9.30	10.35	11.29	12.62
Three-Year Phaseout		3.43	4.39	5.44	9.54	9.10	8.66	8.22	8.88	9.56
East North Central										
NGPA (central estimate)	1.84	2.39	2.98	3.47	6.58	6.52	6.92	7.16	7.96	8.81
NGPA (optimistic)		2.39	2.98	3.47	4.63	5.42	6.25	7.08	7.92	8.86
NGPA (pessimistic)		2.39	2.98	3.47	6.58	7.06	8.32	9.64	10.98	12.28
Three-Year Phaseout		2.93	3.98	5.20	9.54	9.10	8.66	8.22	8.88	9.56
West North Central										
NGPA (central estimate)	2.06	2.78	3.49	4.21	7.10	7.18	7.39	7.50	8.22	8.97
NGPA (optimistic)		2.78	3.49	4.21	5.08	5.84	6.62	7.38	8.16	9.00
NGPA (pessimistic)		2.78	3.49	4.21	7.10	7.68	8.89	10.18	11.45	12.76
Three-Year Phaseout		3.07	4.09	5.30	9.54	9.10	8.66	8.22	8.88	9.56
South Atlantic										
NGPA (central estimate)	2.42	3.08	3.58	4.04	7.69	7.39	7.65	7.80	8.62	9.39
NGPA (optimistic)		3.08	3.58	4.04	5.33	6.08	6.89	7.71	8.55	9.40
NGPA (pessimistic)		3.08	3.58	4.04	7.69	8.15	9.35	10.64	11.82	13.05
Three-Year Phaseout		3.45	4.35	5.41	9.54	9.10	8.66	8.22	8.88	9.56
East South Central										
NGPA (central estimate)	2.09	2.75	3.40	4.07	7.29	7.21	7.47	7.66	8.46	9.28
NGPA (optimistic)		2.75	3.40	4.07	5.22	5.98	6.80	7.60	8.42	9.30
NGPA (pessimistic)		2.75	3.40	4.07	7.29	7.98	9.11	10.40	11.66	12.98
Three-Year Phaseout		3.15	4.20	5.37	9.54	9.10	8.66	[illegible]	8.88	9.56
West South Central										
NGPA (central estimate)	2.47	4.11	5.72	7.11	9.06	8.98	8.88	8.68	9.16	10.04
NGPA (optimistic)		4.11	5.72	7.11	6.33	7.02	7.78	8.51	9.26	10.05
NGPA (pessimistic)		4.11	5.72	7.11	9.06	10.06	11.25	12.50	13.77	15.00
Three-Year Phaseout		3.36	4.41	5.52	9.54	9.10	8.66	8.22	8.88	9.56
Mountain										
NGPA (central estimate)	2.12	3.18	4.20	5.16	7.53	7.61	7.76	7.82	8.57	9.33
NGPA (optimistic)		3.18	4.20	5.16	5.35	6.12	6.91	7.69	8.48	9.35
NGPA (pessimistic)		3.18	4.20	5.16	7.53	8.15	9.29	10.58	11.79	13.05
Three-Year Phaseout		3.11	4.10	5.29	9.54	9.10	8.66	8.22	8.88	9.56
Pacific										
NGPA (central estimate)	2.36	3.17	3.86	4.56	8.13	7.72	7.82	7.95	8.72	9.47
NGPA (optimistic)		3.17	3.86	4.56	5.72	6.45	7.20	7.95	8.71	9.52
NGPA (pessimistic)		3.17	3.86	4.56	8.13	8.68	9.84	11.09	12.32	13.62
Three-Year Phaseout		3.46	4.46	5.60	9.54	9.10	8.66	8.22	8.88	9.56
U.S.										
NGPA (central estimate)	2.23	3.10	3.91	4.69	7.66	7.56	7.73	7.84	8.59	9.36
NGPA (optimistic)		3.10	3.91	4.69	5.48	6.17	6.96	7.75	8.54	9.39
NGPA (pessimistic)		3.10	3.91	4.69	7.66	8.31	9.50	10.76	12.01	13.38
Three-Year Phaseout		3.24	4.25	5.38	9.54	9.10	8.66	8.22	8.88	9.56

[1/] Regional prices show average projected wellhead cost of gas acquired by utilities in each region, not the average wellhead price of gas produced from wells located within each region.

Appendix A-2

PROJECTED AVERAGE WELLHEAD NATURAL GAS ACQUISITION PRICE BY CENSUS REGION 1/
1981-1990
(Constant 1981 $/MMBtu)

Census Regions	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
New England										
NGPA (central estimate)	2.43	2.77	3.02	3.27	5.77	5.21	4.86	4.58	4.67	4.72
NGPA (optimistic)		2.77	3.02	3.27	4.15	4.31	4.44	4.57	4.66	4.74
NGPA (pessimistic)		2.77	3.02	3.27	5.77	5.87	6.12	6.38	6.55	6.75
Three-Year Phaseout		3.14	3.68	4.26	6.93	6.10	5.33	4.69	4.70	4.71
Mid-Atlantic										
NGPA (central estimate)	2.48	2.78	2.97	3.19	5.61	5.01	4.70	4.40	4.48	4.54
NGPA (optimistic)		2.78	2.97	3.19	3.95	4.12	4.25	4.38	4.48	4.57
NGPA (pessimistic)		2.78	2.97	3.19	5.61	5.52	5.72	5.91	5.98	6.22
Three-Year Phaseout		3.13	3.67	4.26	6.93	6.10	5.33	4.69	4.70	4.71
East North Central										
NGPA (central estimate)	1.84	2.18	2.45	2.72	4.78	4.37	4.25	4.09	4.22	4.34
NGPA (optimistic)		2.18	2.45	2.72	3.36	3.63	3.85	4.04	4.19	4.35
NGPA (pessimistic)		2.18	2.45	2.72	4.78	4.73	5.11	5.50	5.79	6.05
Three-Year Phaseout		2.68	3.36	4.08	6.93	6.10	5.33	4.69	4.70	4.71
West North Central										
NGPA (central estimate)	2.06	2.54	2.95	3.30	5.16	4.81	4.55	4.28	4.35	4.42
NGPA (optimistic)		2.54	2.95	3.30	3.69	3.91	4.07	4.22	4.32	4.43
NGPA (pessimistic)		2.54	2.95	3.30	5.16	5.14	5.47	5.81	6.06	6.28
Three-Year Phaseout		2.80	3.45	4.15	6.93	6.10	5.33	4.69	4.70	4.71
South Atlantic										
NGPA (central estimate)	2.42	2.74	2.96	3.17	5.58	4.95	4.71	4.45	4.56	4.62
NGPA (optimistic)		2.74	2.96	3.17	3.87	4.07	4.24	4.40	4.53	4.64
NGPA (pessimistic)		2.74	2.96	3.17	5.58	5.46	5.75	6.07	6.26	6.43
Three-Year Phaseout		3.15	3.67	4.24	6.93	6.10	5.33	4.69	4.70	4.71
East South Central										
NGPA (central estimate)	2.09	2.51	2.87	3.19	5.29	4.83	4.60	4.17	4.48	4.56
NGPA (optimistic)		2.51	2.87	3.19	3.79	4.01	4.18	4.34	4.46	4.58
NGPA (pessimistic)		2.51	2.87	3.19	5.29	5.31	5.62	5.94	6.18	6.40
Three-Year Phaseout		2.88	3.55	4.21	6.93	6.10	5.33	4.69	4.70	4.71
West South Central										
NGPA (central estimate)	2.47	3.75	4.83	5.57	6.58	5.99	5.44	4.95	4.96	4.95
NGPA (optimistic)		3.75	4.83	5.57	4.60	4.70	4.79	4.86	4.90	4.95
NGPA (pessimistic)		3.75	4.83	5.57	6.58	6.74	6.92	7.13	7.29	7.39
Three-Year Phaseout		3.07	3.72	4.32	6.93	6.10	5.33	4.69	4.70	4.71
Mountain										
NGPA (central estimate)	2.12	2.90	3.55	4.04	5.47	5.10	4.78	4.46	4.54	4.60
NGPA (optimistic)		2.90	3.55	4.04	3.88	4.10	4.25	4.39	4.50	4.61
NGPA (pessimistic)		2.90	3.55	4.04	5.47	5.46	5.72	6.02	6.24	6.43
Three-Year Phaseout		2.84	3.46	4.15	6.93	6.10	5.33	4.69	4.70	4.71
Pacific										
NGPA (central estimate)	2.36	2.89	3.26	3.57	5.90	5.17	4.81	4.54	4.62	4.66
NGPA (optimistic)		2.89	3.26	3.57	4.15	4.32	4.43	4.54	4.61	4.69
NGPA (pessimistic)		2.89	3.26	3.57	5.90	5.81	6.06	6.33	6.53	6.71
Three-Year Phaseout		3.16	3.77	4.39	6.93	6.10	5.33	4.69	4.70	4.71
.S.										
NGPA (central estimate)	2.23	2.83	3.30	3.68	5.56	5.06	4.76	4.48	4.55	4.61
NGPA (optimistic)		2.83	3.30	3.68	3.94	4.13	4.29	4.42	4.53	4.63
NGPA (pessimistic)		2.83	3.30	3.68	5.56	5.57	5.85	6.14	6.36	6.56
Three-Year Phaseout		2.96	3.59	4.22	6.93	6.10	5.33	4.69	4.71	4.71

1/ Regional prices show average projected wellhead cost of gas acquired by utilities in each region, not the average wellhead price of gas produced from wells located within each region.

Appendix B

HISTORICAL AND PROJECTED NGPA (CENTRAL ESTIMATE) CASE RESIDENTIAL GAS PRICES BY CENSUS REGION

Year	NE	MA	ENC	WNC	SA	ESC	WSC	MT	PC
Historical (current $/MMBtu)									
1960	2.08	1.32	0.93	0.83	1.22	0.90	0.70	0.72	0.91
1965	1.89	1.31	0.95	0.85	1.23	0.91	0.77	0.74	0.91
1970	1.88	1.34	0.99	0.92	1.23	0.92	0.85	0.83	0.97
1975	3.22	2.26	1.56	1.37	2.02	1.43	1.35	1.34	1.58
1980	5.48	4.44	3.37	3.08	4.13	3.37	2.99	3.23	3.51
Projected NGPA (central estimate) Case (constant 1981 $/MMBtu)									
1981	6.40	5.82	3.90	3.70	5.00	3.87	4.18	4.40	3.88
1982	6.72	6.13	4.30	4.28	5.35	4.52	5.47	5.14	4.20
1983	6.82	6.34	4.57	4.66	5.52	4.80	6.54	5.77	4.52
1984	6.97	6.61	4.87	5.00	5.75	5.09	7.31	6.25	4.80
1985	9.30	9.08	6.95	6.90	7.95	7.13	8.42	7.84	7.04
1986	8.85	8.61	6.50	6.44	7.38	6.66	7.84	7.38	6.42
1987	8.54	8.42	6.46	6.23	7.19	6.45	7.29	7.10	6.16
1988	8.12	8.22	6.38	6.02	6.97	6.21	6.79	6.82	5.95
1989	8.06	8.36	6.52	6.13	7.04	6.29	6.79	6.89	6.02
1990	8.02	8.50	6.64	6.22	7.11	6.35	6.78	6.94	6.07

Sources: Historical: *Gas Facts 1980* (Arlington, VA, American Gas Association, 1981).

Historical Statistics of the Gas Utility Industry 1966-1975 (Arlington, VA, American Gas Association, 1977).

Projected: Based on TERA simulations.

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Representative RICHMOND. Thank you, Mr. Lawrence. Mr. Cooper.

STATEMENT OF MARK COOPER, DIRECTOR OF RESEARCH, CONSUMER ENERGY COUNCIL OF AMERICA, WASHINGTON, D.C.

Mr. COOPER. My name is Mark Cooper. I am director of research for the Consumer Energy Council of America. CECA is a broad-based coalition of major national consumer, labor, farm, public power, rural electric cooperative, senior citizen, urban, and low-income organizations.

I am pleased to appear before the subcommittee today and offer CECA's views on the macroeconomic impacts of natural gas deregulation, and I will actually address those macroeconomic impacts.

My comments today are based on a series of studies we have been doing on the macroeconomic impacts of natural gas deregulation, and I would respectfully submit those for the subcommittee.

The first study is entitled "Natural Gas Price, Deregulation: A Case of Trickle Up Economics," and it examines the economic equity and income transfer effects of decontrol. And we have had some brief mention of that; there would be a little bit of wealth transfer. The numbers are on the order of $70 to $100 billion transferred from labor and other nongas industry owners of stock to the gas industry.

Representative RICHMOND. Over a period of what time?

Mr. COOPER. Over a period of 3 to 10 years. The major transfers come very early when compared to the Natural Gas Policy Act. Essentially in the first 3 years after accelerated decontrol.

The second study, which is entitled "The Past as Prologue I—The Underestimation of Price Increases in the Decontrol Debate: A Comparison of Oil and Natural Gas," which we are releasing to the subcommittee today, addresses the question of price projections in the deregulation of natural gas. And, again, we've heard a bit of that. And what we do in this study is we go back and we look at the history of predictions about what would happen in energy markets with decontrol, essentially crude oil decontrol, heating oil decontrol, gasoline decontrol. And what we find is that supporters of decontrol testify that price increases will be a certain amount, and invariably the actual increase is twice as high. So I would suggest that a good rule of thumb is whatever you hear the supporters of decontrol saying, double it and that's a good estimate.

Representative RICHMOND. That's quite a flamboyant estimate, Mr. Cooper.

Mr. COOPER. Excuse me.

Representative RICHMOND. I say that's quite a flamboyant estimate when you say double the testimony we've had today.

Mr. COOPER. Well, historically if you look at what people who came before various committees in the Congress——

Representative RICHMOND. You're talking about $60.

Mr. COOPER. No, no. I'm talking about the rate of increase from where we are today to where we will end up in 1985 under an accelerated decontrol path.

Representative RICHMOND. Mr. Butler feels it will go from $30 to $37.

Mr. COOPER. No, it's not $30 today.

Representative RICHMOND. We're taking equivalents.

Mr. COOPER. What I'm saying is that, for instance, the Natural Gas Supply Association predicted over a 3-year period for accelerated decontrol an increase of 76 percent, whereas the Department of Energy has suggested 110 percent, Wharton Econometric Forecasting Associates has used projections of almost 200 percent. So you get a wide range of projections. I'm saying historically be very cautious of those low estimates.

Representative RICHMOND. So much depends on the oil market. If indeed this country continues to conserve and we do buy 40 million new fuel efficient automobiles and we don't have a flareup in the Middle East, there is a chance that oil could stabilize at $30 a barrel.

Mr. COOPER. One thing we will have to do first is put 3 million people back to work, and in all of the industralized countries probably 10 to 15 million people who have been put out of work by an energy-related recession. Second of all, we'll have to see a serious softening in the oil market. Remember now, in 1978 the average price of a barrel of oil was about $12. It went up to the low $30's. It's gone down $2. We're still several hundred billion dollars in the hole. So we are talking about a very bad economic situation.

It is possible that you will see a softening in the market, but I would reserve judgment on that. We need to see the industralized economies working again. We need to see the price of oil, the pressure on the price of oil hold for a significant period of time before we start counting our chickens.

It is also interesting to note when they talk about the price of gas being set by the price of oil. That means essentially that until today OPEC would set our price of gas.

We are taught in basic economics that the price of a commodity should be set by its production cost. That is, under a capitalist, competitive economy everyone is out there working as hard as they can to produce the commodity at the lowest price possible. No one has said that today. Everyone has said that the price of gas will immediately run up to a very high price, whatever price OPEC sets on oil. We don't believe that that's the way we should set our price of gas.

But let me get to the essential arguments I wanted to make today, which is the macroeconomic impact, because we have heard a lot about the efficiency gains in the natural gas market and benefits of more supplies and things like that. We haven't heard the other side, which is what energy prices do to our economy.

The bottom line is that the ultimate impact of natural gas deregulation, the negative effects far outweigh any positive benefits there are.

Even the Department of Energy under the current administration had to admit that natural gas deregulation would cause a major increase in inflation in the short run, perhaps 2 percentage points, and in the long run there would be an increase in the price level which would linger for more than a decade. Our analyses suggest that the price impact, the inflationary impact could be higher than that.

As I say, we've seen in the case of every major decontrol decision in the 1970's prices far outstrip the optimistic projections. That is, they went far above that.

Even the administration had to admit that there would be at best only a slight increase in gross national product over a 15-year period, and there might even be a decrease in gross national product as a result of natural gas decontrol.

We think the likelihood is that there will be a decrease in the gross national product.

To a significant degree, and this is one of the least understood points, that decrease in gross national product occurs because deregulation leads to a decline in productivity in the general economy. And the Department of Energy admitted, although it wasn't well publicized, the loss would be perhaps 1 percent; that is, a decline in productivity in the general economy of 1 percent over the next 3 years, with a lingering loss of productivity of three-quarters of a percent over 15 years.

The reason that we suffered this loss in productivity is that when we have decontrol of natural gas prices we suffer initial recessionary impact, the utilization of labor and capital declines, investment in labor-enhancing technology is put off, and a number of other factors such as this occur, which cause this decline in productivity.

In addition, ultimately a recessionary impact from decontrol, coupled with losses in productivity, leads to job losses.

The Department of Energy suggested 300,000 jobs over a 3-year period. I think a good estimate would be somewhat higher than that. And losses in jobs due to energy price deregulation are very tenacious. They linger certainly out to the end of the decade.

It should also be noted, and again this is based on a Department of Energy analysis, that the loss of output, jobs, and income will be particularly severe in a number of industries which are already extremely hard pressed. Residential construction, which has been in a state of depression since the oil price decontrol decision, would be one major victim. The automobile industry, which is already under extreme financial and international competitive pressure, and in fact is in a state of depression, will be another.

Finally, agriculture and chemical industries, which are two of our major export industries, will suffer a heavy blow. But the effect of natural gas decontrol reaches all sectors of the economy.

Nor can we really look forward to increasing production of natural gas.

Again, the Department of Energy projected that under all decontrol scenarios the actual quantity of gas supply in this country from domestic sources would be lower than under the Natural Gas Policy Act. So there is no gain in supply.

The problem is that when you raise prices in a market that is not extremely competitive, where the rate of profit is already high, you do not motivate more production; you simply let suppliers make more profit by doing what they would have done anyway.

Not only is the picture bleak on the economic efficiency side, but it is also bleak on the equity side, and I mentioned this above. Supply-side economists and proponents of deregulation argue that decontrol will increase the national economic pie, that is, you get more investment, efficiency and gas supplies, and that the benefits of that larger pie will trickle down throughout society, enabling everyone to claim a bigger slice. However, in the natural gas market supply-side economics becomes something even more pernicious. It becomes trickle up economics. Instead of benefits trickling down from the small group of gas producers to every member of society, income actually trickles up from the vast majority to the producers.

Again, the Department of Energy's analysis showed that in the short and in the long run the owners of gas industry stock gained on the order of $60 to $100 billion, while labor loses on the order of $70 to $85 billion, and the owners of non-gas industry stock lose $10 to $20 billion. So it's a massive incomes transfer program from the masses to the producers of gas.

And, of course, the ability of supply-side magic—voodoo, some have called it—to actually increase the national economic pie is highly uncertain. But it's ability to transfer wealth is undeniable. Thus natural gas decontrol isn't even a trade-off between equity and efficiency. It fails the test on both equity and efficiency grounds.

In concluding, let me make a remark about the political economy of natural gas prices, and energy prices in general, and I am pleased to see that Mr. Butler recognizes politics and interest groups.

It has become popular of late to look back at the last decade and declare that the 1970's expressed the failure of half a century of progressive economic policies. In fact, if one analyzes the decade with any objectivity one must conclude that one, and primarily one, policy failed—energy price policy. Remove energy price increases and you remove fully half, probably two-thirds of the economic slowdown of the decade. Remove energy price increases and there is almost no recession in 1974 and none in 1979–80. Remove energy price increases and there is no double-digit inflation at any time in the decade. Remove energy price increases and on average 2 million more Americans are at work every year in the decade. Remove energy price increases and there is no depression in housing or automobiles in 1979–80.

In the 1970's the economy was not collapsing. Rather, energy prices were crushing it.

Moreover, as a recent report released by the Joint Economic Committee, a report to which we contributed, showed, most of the increases in the energy bill, even the oil bill, were paid to domestic, not foreign, producers.

We did it to ourselves. And our studies show that if we decontrol natural gas we will do it to ourselves again. From the point of view of the economy, we made a terrible mistake in our energy decontrol decision. Accelerating natural gas decontrol would be a mistake of similar magnitude, with little or no benefit in GNP or increased gas supplies. The Nation would suffer a loss in income distribution, a loss of equity, inflationary pressures, an increase in unemployment rates, productivity losses, and a weakened international trade position.

Certainly this is too high a price to pay for no return.

I would be glad to answer any of your questions.

[The prepared statement of Mr. Cooper, together with the studies referred to, follows:]

PREPARED STATEMENT OF MARK COOPER

Mr. Chairman and Members of the Subcommittee:

Good morning. My name is Dr. Mark Cooper, and I am Director of Research for the Consumer Energy Council of America (CECA). CECA is a broad-based coalition of major national consumer, labor, farm, public power, rural electric cooperative, senior citizen, urban, and low income organizations (see attached list).

I am pleased to appear before the Subcommittee to offer CECA's views on the macroeconomic impacts of natural gas deregulation. We base our testimony today on the CECA Research Foundation's recent series of in-depth analyses of the impacts of deregulation. I respectfully request that these studies be included in the record.

Our first report in this series, "Natural Gas Deregulation: A Case of Trickle Up Economics," examines the equity and income transfer effects of decontrol. Today we are releasing for the first time our second report. "Past as Prologue I: The Underestimation of Price Increases in the Decontrol Debate -- A Comparison of Oil and Natural Gas" addresses price projections in the deregulation of oil and gas. We will submit our third report, for inclusion in the record, in the near future. That report, entitled "Past as Prologue II: The Economic Effects of Rising Energy Prices -- A Comparison of the Oil Price Shock and Natural Gas Decontrol," examines the relationship between changes in energy prices and changes in economic activity.

Today's testimony is based on all of our research. This research draws on our careful scrutiny of the structure of the energy industry, the recent performance of the economy in the wake of crude oil price increases, the Administration's own analysis of oil price shocks and natural gas decontrol, prepared by the Department of Energy, and recent theoretical and conceptual advances in energy policy analysis. In my remarks today, I will briefly summarize the conclusions of our studies.

After examining all of the evidence -- evidence largely gathered by the gas industry and the Department of Energy -- we must conclude that the overwhelmingly negative impacts of natural gas deregulation far outweigh the potential benefits. Indeed, there are almost no benefits resulting from gas decontrol measured either as increased output in the economy or increased gas supplies, but there are major costs -- measured as inflation, productivity losses, job losses and inequitable wealth transfers.

Natural gas deregulation will provide the most cogent case for the domino theory since the Vietnam war. As deregulation drives up fuel prices and inflation, dominoes will fall throughout the economy: output will decrease; unemployment will increase; productivity will decline; gas supplies will decrease; and equity will be undermined. Let me briefly examine each of these major macroeconomic effects of decontrol.

Inflation

Because energy plays such a critical role in the economy, energy price increases have a major impact on inflation, and an examination of that impact should be the starting point for any analysis. Even the Administration had to admit that deregulation of natural gas would cause a major increase in inflation in the short run -- about 2 percentage points -- and a long term increase in the price level that would linger for more than a decade. Our analysis suggests that the increase in inflation resulting from deregulation could be closer to 3.5 percent over the first three years.

We are confident that our estimate of the inflationary impact of decontrol is realistic, because we have examined the recent historical record of energy price responses to decontrol. We find that *projections* of the price increases due to oil decontrol were consistently only half as high as *actual* price increases. Contrary to popular belief, OPEC was not the villain here: the reason that price increases did not follow price projections was *not* because of unpredictable external price shocks; rather, it was because those price projections were based on the erroneous assumption that energy markets are highly competitive.

In the case of each major policy decision to decontrol oil -- heating oil in 1976, crude oil in 1979, and gasoline in 1981 -- the public was assured that, aside from OPEC, the domestic energy industry, restrained by competitive market forces, would not be able to increase its profits abnormally. Yet, in each case we observed prices increasing at least twice as fast as comepetitive forces would have allowed, and most of the unexpected increase went into increasing profit margins. These indications of noncompetitive behavior continue to this very day.

Since price projections are the driving force behind projections of other economic impacts, an error in this realm reverberates throughout all other estimations of the impact of deregulation.

Output

Even the Administration had to admit that there would be, at best, only a slight -- one-quarter of one percent -- increase in GNP and there might even be a decrease as a result of natural gas deregulation. In fact, our review of both the empirical and theoretical evidence available suggests that the likelihood is much greater that there will be a decline in GNP as a result of deregulation. The decline might be as high as 2 percent of GNP over the next three years.

The domino effect of even larger price increases is only part of the reason for our belief that GNP impacts will be negative. Another reason is the fact that gas is an especially prized industrial fuel. The ability to substitute for gas in its industrial uses is low. Therefore, gas price increases force large declines in output and large price increases. Price increases will be so large and the ability to reduce gas consumption so limited that price increases will lead to major losses of real income which in turn reduce output.

Unemployment

The domino effect of decreasing consumption and output is most fully reflected in increasing unemployment. Even the Administration had to admit that decontrol would increase unemployment, with as many as 300,000 jobs lost over the next three years (cumulative). Our analysis suggests that job losses could be on the order of 600,000 in the short term. Furthermore, the loss of employment is particularly tenacious, with much of it lingering for the rest of the decade.

It should also be noted that these losses of output, jobs and income will be particularly severe in a number of industries which are already extremely hard pressed. Residential construction, which has been in a state of depression since crude oil price decontrol will be one victim. The automobile industry, which is already under extreme financial and international competitive pressures, will be another. Finally, agriculture and the chemical industry, two of our primary export industries, will suffer a heavy blow from rising gas prices.

Productivity

Even the Administration had to admit that decontrol would reduce productivity in the general economy, by as much as one percent over the next three years. In fact, the Department of Energy's analysis shows, although the fact wasn't widely publicized, that productivity losses in the economy as a whole are larger than efficiency gains in the energy sector. Again, we believe that these numbers are extremely conservative. Moreover, because this is the most frequently misunderstood point in the analysis of decontrol, let me briefly elaborate on the ways that decontrol leads to losses of productivity and decreases in efficiency in the non-energy sectors of the economy.

There are several explanations for the productivity impacts of deregulation. First, because the utilization of labor and capital declines more slowly than the decline of output, productivity declines. Second, as economic activity declines, the general rate of investment drops off, slowing productivity growth. Third, as energy prices rise, capital and labor are substituted for energy in the production process, resulting in less output per unit of capital and labor input. Fourth, insofar as capital and labor are not perfect substitutes for energy, an additional loss in productivity occurs. Fifth, the need to invest in energy saving delays the investment in equipment which enhances labor productivity. This reduces the growth in the productivity of labor.

Gas Supplies

Nor can we look forward to increasing production of gas. Even the Administration had to admit that gas supplies will actually decrease, rather than increase, in the long run due to decontrol. Our Research Foundation's analyses show that the supply response of the gas market is likely to be extremely small and the reason for that is that profits are already extremely high -- decontrol does not motivate more production in a non-competitive market, it simply lets suppliers make more profit by doing what they would have done anyway.

Equity Impacts

Not only is the picture bleak on the economic efficiency side of the picture, but it is especially bad from the equity point of view.

Supply-side economists and proponents of deregulation argue that decontrol will increase the "national economic pie" (through increases in investment, efficiency, and gas supplies) and that the benefits of the larger pie will "trickle down" throughout society, enabling everyone to claim a bigger slice of the pie.

However, in the natural gas market, supply-side economics becomes something even more pernicious than trickle _down_ economics; natural gas deregulation is nothing less than trickle _up_ economics. Instead of benefits trickling _down_ from the small group of gas producers to every member of society, income trickles up from the vast majority to gas producers.

Even the Administration's own analysis cannot hide this fact. According to DOE, in the short run, owners of gas industry stock would gain $63.7 billion, while labor would lose $70.1 billion and non-gas industry stockholders would lose $9.4 billion. In the long run (nine years), gas industry stockholders would gain $85.2 billion, while labor would lose $55.6 billion and owners of non-gas industry stock would lose $16.5 billion.

Thus, deregulation will cause a massive redistribution of wealth: for every $1 of additional income that gas producers gain, labor loses 50 cents and owners of non-gas-related capital lose 25 cents. (Supply side magic creates the additional 25 cents gain for gas producers). In the short run, the income transfer effects are staggering; the long run recovery still leaves the wealth out of the pockets of consumers and in the hands of gas producers.

Furthermore, the ability of supply side voodoo to actually increase the national economic pie is highly uncertain, but its ability to transfer wealth from all to a small group of the very wealthy is undeniable. Thus, natural gas decontrol isn't even a trade-off between equity and efficiency. It flunks the test on both equity and efficiency grounds.

Conclusion

Each of these points is carefully laid out and explained in our three studies to which I referred earlier. I wish there were time to describe each of the points in detail, but I will be happy to elaborate in response to your questions. In conclusion, I would like to make a more general point about energy prices and the political economy of this nation.

It has become popular, of late, to look back at the decade of the 1970s and declare that the decade expressed the failure of half a century of progressive economic policies. In fact, if one analyzes the decade with any objectivity, one must conclude that one and primarily one policy failed -- energy price policy.

Remove energy price increases and you remove fully half and probably two-thirds of the economic slowdown of the decade. Remove energy price increases and there is almost no recession in 1974 and none in 1979-80. Remove energy prices increases and there is no double digit inflation at any time in the decade. Remove energy price increases and, on average, two million more Americans are at work in every year in the decade. Remove energy price increases and there is no depression in housing or automobiles.

In the 1970s, the economy was not collapsing, rather energy prices were crushing it. Moreover, as a recent report released by the Joint Economic Committee, a report which the CECA Research Foundation helped prepare, shows, most of the increase in the energy bill was paid to domestic, not foreign, producers. We did it to ourselves. And, our studies show, if we decontrol natural gas, we will do it to ourselves again.

From the point of view of the economy, we made a terrible mistake in our energy price decontrol decision. Accelerated natural gas decontrol would be a mistake of similar magnitude. With little or no benefits -- in GNP or in increased gas supplies -- the nation would suffer a tremendous income redistribution, added inflationary pressure, an increase in the already abysmal unemployment rate, productivity losses, and a weakened international trade position. Clearly, this is too high a price to pay for zero return.

I applaud the Subcommittee's efforts to examine carefully the macroeconomic impacts of natural gas deregulation, and I thank you for the opportunity to present the views of the Consumer Energy Council of America. I would be happy to respond to any of your questions.

CONSUMER ENERGY COUNCIL OF AMERICA

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Adams Electric Cooperative, Inc.
AFL-CIO
Allegheny Electric Cooperative, Inc.
Amalgamated Clothing & Textile Workers Union, AFL-CIO
American Federation of State, County & Municipal Employees, AFL-CIO
American Federation of Teachers, AFL-CIO
American Public Power Association
Association of Illinois Electric Cooperatives
Association of Texas Electric Cooperatives Inc.
Basin Electric Power Cooperative
Central Power Electric Cooperative, Inc.
Citizen/Labor Energy Coalition
Consumer Federation of America
Cooperative League of the USA
East River Electric Power Cooperative, Inc.
Florida Electric Cooperatives Association
Hoosier Energy Division, Indiana Statewide Rural Electric Cooperative
Industrial Union Department, AFL-CIO
International Association of Machinists and Aerospace Workers, AFL-CIO
International Molders and Allied Workers Union, AFL-CIO
Kansas Electric Cooperatives, Inc.
Kansas Municipal Utilities
Lincoln (Nebraska) Electric System
Marine Engineers Beneficial Association
Maritime Trades Department, AFL-CIO
Minnesota Farmers Union
National Community Action Agency Executive Directors Association
National Council of Senior Citizens
National Farmers Organization
National Farmers Union
National Rural Electric Cooperative Association
North Carolina Electric Membership Corporation
North Dakota Farmers Union
Northeast Missouri Electric Power Cooperative
Northeast Public Power Association
Northwest Iowa Power Cooperative
Northwest Public Power Association
Oil, Chemical and Atomic Workers International Union, AFL-CIO
Pennsylvania Rural Electric Association
Rocky Mountain Farmers Union
Service Employees International Union, AFL-CIO
South Dakota Farmers Union
Southside Electric Cooperative Inc.
Tennessee Valley Public Power Association
Texas AFL-CIO
United Auto Workers
United States Conference of Mayors
United Steelworkers of America, AFL-CIO
Washington Public Utility Districts' Association
Washington State Labor Council, AFL-CIO
Wisconsin State AFL-CIO

NATURAL GAS PRICE DEREGULATION:
A CASE OF TRICKLE UP ECONOMICS

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CONSUMER ENERGY COUNCIL OF AMERICA

RESEARCH FOUNDATION

January 28, 1982

TABLE OF CONTENTS

Chapter Page

I. GENERAL INTRODUCTION 1

  A. The Department of Energy's Natural Gas Analysis 3

    1. DOE's Natural Gas Market Model 3

    2. DOE's Macroeconomic Analysis 4

      a. Supply-Side Model 4
      b. Demand-Side Models 5

  B. The Basic Message: Trickle Up Economics 6

II. THE IMPACT OF DECONTROL 8

  A. Details of the Analysis 8

    1. Impact on Labor and Other Sectors 11

    2. Impact on Productivity and Gas Production 12

  B. DOE's Sleight of Hand 14

    1. Differential Treatments of Changes in GNP 14

    2. Denial of Income Transfer Effects of Deregulation 15

  C. The Econometric Results 17

    1. Similarities and Differences 17

    2. Explanation of the Differences 20

III. CONCLUSION 25

FOOTNOTES 26

LIST OF TABLES

Page

Table 1:
SUMMARY OF THE MACROECONOMIC EFFECTS OF FULL DECONTROL IN 1982 OF NATURAL GAS PRICES 9

Table 2:
SUMMARY OF THE MACROECONOMIC EFFECTS OF PHASED DECONTROL OF NATURAL GAS PRICES 10

Table 3:
SUMMARY OF THE EFFECT OF DECONTROL ON PRODUCTIVITY AND NATURAL GAS PRODUCTION 13

Table 4:
THE MACROECONOMIC EFFECTS OF FULL DECONTROL DEPICTED IN THREE DIFFERENT MODELS 18

Table 5:
THE MACROECONOMIC EFFECTS OF PHASED DECONTROL IN TWO DIFFERENT MODELS 21

NATURAL GAS PRICE DEREGULATION: A CASE OF TRICKLE UP ECONOMICS

I. GENERAL INTRODUCTION

The decontrol of natural gas prices may be the single most important energy policy decision of the 1980s. Natural gas is the dominant household fuel. With more than half the households in America heating, cooking and heating water with natural gas, it accounts for almost 55 percent of all the energy used in the home.[1] Natural gas is also a prime industrial fuel, accounting for 31 percent of all the energy consumed by industry.[2]

Since many of the uses of natural gas are vital to basic daily activities and economic processes, the decontrol of natural gas prices could have a greater impact on the nation's consumers and the economy than any other energy pricing policy decision. Thus, any decision to decontrol natural gas should be based on a careful, rigorous and objective analysis of the costs and benefits that will flow from such a decision. This is no easy matter.

Responsible analysis of natural gas decontrol is an extremely complex task. The natural gas market itself, as well as the link between energy and the economy, is complicated and not well understood. Beyond that, the impact of rising prices on the distribution of wealth is difficult to measure. Finally, the special interests involved in any decision to decontrol are extremely powerful and passions run high because so much is at stake. A great deal of information (and misinformation) must be sorted out, analyzed and evaluated in order to conduct a proper analysis.

Fortunately, the analysis of the decontrol of natural gas need not be based on pure theory or guesswork. Over the past decade, because energy policy has been such a critical issue, the analytic tools used to examine policy decisions have been greatly improved. Moreover, in the last five years the nation has experienced four major decontrol decisions: heating oil (May 1976), natural gas (August 1978), crude oil (June 1979) and gasoline (January 1981). A track record has been established which should shed considerable light on how the energy markets and the economy behave in the wake of decontrol. It should also give clues to which tools and approaches best predict the outcome.

With this report, the Consumer Energy Council of America Research Foundation (CECA/RF) initiates a series of studies which will examine the history of oil decontrol and predictions about natural gas decontrol. CECA/RF's series of studies will review the record of price projections and price increases, the supply and demand responses and the economic and equity impacts of crude oil decontrol and contrast them with the various projections for natural gas decontrol. Future reports will also examine the potential and actual effects of windfall profits taxes.

This initial report, however, takes a somewhat different approach. It examines basic philosophical, theoretical and technical aspects of the Department of Energy's most recent analysis of natural gas decontrol.[3] We believe that there is a message of such shocking significance in the DOE analysis -- that natural gas decontrol isn't trickle down economics, it is trickle up economics -- that we will postpone discussion of a number of issues (such as price projections, supply and demand elasticities, etc.) which should be dealt with first, and move directly to the heart of the matter.

A. The Department of Energy's Natural Gas Analysis

1. DOE's Natural Gas Market Model

The Department of Energy's study of natural gas decontrol consists of two separate analytic exercises. The first exercise involves an attempt to model the natural gas market.[4] That is, using certain assumptions about production costs, the geological availability of gas and the economic demand for gas, DOE predicts the supply of and demand for gas under various decontrol scenarios.

2. DOE's Macroeconomic Impact Analysis

In the second exercise, DOE uses the supply, demand and price predictions from its natural gas modeling exercise above as inputs into the analysis of the macroeconomic impact of decontrol.[5] The objective is to predict the impact of decontrol on the Gross National Product (GNP), inflation, employment and other measures of the performance of the economy.

For the purposes of the macroeconomic analysis, DOE uses three different models, one of which is called a supply-oriented model and two of which are called demand-oriented models. The difference between the models, as DOE sees it, is as follows:

a. Supply-Side Model

The supply-side model (specifically the Hudson/Jorgenson Dynamic General Equilibrium Model) is driven by supply conditions -- the productivity conditions in the economy and changes in the supply of inputs for production (i.e., the factors of production, capital and labor). To simulate the impact of decontrol, that impact is measured by changes in potential GNP (the output that could be achieved if all factors of production were fully utilized).

b. Demand-Side Models

The demand-side models (specifically the Wharton Annual and Industry Forecasting Model [WAIFM] and the DRI Model) are driven by demand conditions -- the level of aggregate demand -- to simulate the impact of decontrol. The impact is typically measured by changes in actual GNP, consumption and employment.

DOE's preference for the supply-oriented model is quite evident in its discussion. This report will demonstrate that the differences in the output of the models are not as great as DOE suggests and that they are really related to a rather different factor -- an assumption about the wage-price spiral.

Each of the analyses, as well as the interconnection between them, is extremely complex. However, careful reading of all of DOE's natural gas analyses (in addition to the study itself, there are four appendices as well as several attachments and annexes) reveals numerous points at which critical assumptions are made by DOE which dictate the nature of the results. At each of these points, the assumption chosen by DOE is highly favorable to decontrol. We have grave doubts about DOE's assumptions in both the natural gas market analysis and in the macroeconomic analysis and we believe that these assumptions call into question the value of the entire analysis for decisionmaking.

It would be most logical to begin CECA/RF's series with a critique of the gas market model and then examine the macroeconomic analysis. However, we believe that there is a message about supply-side economics in DOE's study that is of such overwhelming importance that we will devote our first report to a discussion of DOE's macroeconomic analysis. In other words, for the moment, we will not question DOE's assumptions and projections about the gas market and will concentrate instead on the implications of a so-called "supply-oriented" natural gas policy for the economy.

B. The Basic Message: Trickle Up Economics

Supply-side economics is typically presented as a strategy for increasing the national economic pie. By creating incentives to save and invest, it is argued that all members of society can be made better off. That is, the pie gets bigger and everyone can benefit by taking a bigger piece. However, in order to expand the pie, it is necessary to transfer resources from those with a high propensity to consume (low and moderate income groups) to those with a high propensity to save (high income groups).[6] In the first instance, then, it is a small group that benefits. It is only at some later date, if output expands and if resources "trickle down," as David

Stockman admitted in the widely publicized December 1981 Atlantic Monthly article, that the great majority of citizens can benefit.

In fact, DOE's own analysis of natural gas decontrol shows that supply-side economics in the natural gas market is not trickle down economics at all -- it is trickle up economics. With a massive transfer of wealth to gas producers, DOE's analysis shows that the pie might get a little bigger, but even after 15 years only those who own gas related capital services (i.e., owners of gas industry stocks) will be better off. Everyone else, i.e., labor and owners of non-gas related capital services, would still be worse off even after 15 years.

That this outcome is abundantly clear, even granting DOE's optimistic assumptions, should be a cause of concern to both the supporters and opponents of supply-side policy. Let us look at this troubling result in detail.

II. THE IMPACT OF DECONTROL

A. Details of the Analysis

Table 1 presents the results of DOE's analysis of the impact of full decontrol on the aggregate GNP and the distribution of income between owners of capital and labor. Potential GNP is projected to increase by $41 billion -- or half a percent -- over the 15 year period (in constant 1980 dollars). Labor's gross income is projected to decline by $53 billion. The income of non-gas-related capital is projected to decline by $28 billion, while the income of gas-related capital is projected to rise by $122 billion.

Table 2 presents the results of DOE's analysis of accelerated/phased decontrol (a scenario for decontrol that closely approximates the proposals being discussed for legislation in early 1982). Potential GNP is projected to increase by $38 billion (1980 dollars) over the 15 year period. Labor's gross income is projected to decline by $35 billion, while that of non-gas-related capital is projected to decline by $21 billion. The income of gas-related capital is projected to rise by $95 billion.

To summarize this result simply, for every one dollar of additional income that holders of gas-related capital gain, labor loses fifty cents and holders of non-gas-related capital lose twenty-five cents. Supply-side magic (i.e., increasing investment) creates the

Table 1

SUMMARY OF THE MACROECONOMIC EFFECTS OF FULL DECONTROL IN 1982 OF NATURAL GAS PRICES
(Billions of 1980 Dollars)

Changes from the current policy situation in:

	Real GNP	Gross Income		
		Labor	Capital	
			Gas-Related	Other
1982	- 8.5	-37.1	+33.4	- 4.8
1983	- 6.7	-33.0	+30.5	- 4.3
1984	- 5.5	-30.0	+29.3	- 4.8
1985	- 3.9	+ 0.9	+ 4.1	- 1.1
1986	+ 5.1	+ 2.3	+ 4.3	- 1.4
1987	+ 5.7	+ 3.7	+ 3.4	- 1.4
1988	+ 5.1	+ 3.7	+ 2.7	- 1.2
1989	+ 5.7	+ 4.4	+ 2.7	- 1.2
1990	+ 6.0	+ 5.0	+ 2.3	- 1.2
1991	+ 5.3	+ 4.6	+ 2.0	- 1.2
1992	+ 6.0	+ 5.1	+ 2.1	- 1.2
1993	+ 6.6	+ 6.9	+ 0.9	- 1.2
1994	+ 6.0	+ 5.1	+ 2.3	- 1.4
1995	+ 6.0	+ 5.1	+ 2.1	- 1.2
Cumulative Effect	+40.7	-53.3	+122.1	-27.8

Source: U.S. DOE, Macroeconomic Consequences, p. I-ii.

Table 2

SUMMARY OF THE MACROECONOMIC EFFECTS OF PHASED DECONTROL OF NATURAL GAS PRICES
(Billions of 1980 Dollars)

Changes from the current policy situation in:

	Real GNP	Gross Income		
		Labor	Capital	
			Gas-Related	Other
1982	- 3.4	-14.7	+ 13.1	- 1.8
1983	- 6.2	-25.6	+ 22.4	- 3.0
1984	- 6.7	-30.3	+28.2	- 4.6
1985	+ 3.9	0.0	+ 4.8	- 0.9
1986	+ 5.3	+ 1.6	+ 5.1	- 1.4
1987	+ 5.1	+ 2.8	+ 3.7	- 1.4
1988	+ 4.6	+ 3.0	+ 2.7	- 1.1
1989	+ 5.1	+ 3.5	+ 2.7	- 1.1
1990	+ 5.3	+ 4.1	+ 2.5	- 1.2
1991	+ 4.6	+ 3.7	+ 2.0	- 1.1
1992	+ 5.3	+ 4.3	+ 2.0	- 1.1
1993	+ 4.3	+ 3.5	+ 1.4	- 0.7
1994	+ 5.3	+ 4.3	+ 2.1	- 1.1
1995	+ 5.3	+ 4.4	+ 2.0	- 1.1
Cumulative Effect	+37.8	-35.4	+94.7	-21.4

Source: U.S. DOE, Macroeconomic Consequences, p. I-43.

additional twenty-five cents that owners of gas-related capital gain. That is, the pie may get a little bigger as a result of decontrol, but just about everyone will get a smaller piece. In fact, the transfer of resources (the losses in income of labor and owners of non-gas industry stock) is nearly twice as large as the increase in the total pie (the increase in GNP). Moreover, these are the bottom line results after all costs and benefits of decontrol have been considered.

1. Impact on Labor and Other Sectors

According to DOE's study, the magnitude of the gains and losses is quite similar under either full or phased decontrol. The pattern of losses is also similar in both cases. Labor loses big in the first three years, then recovers slightly, but still remains the biggest loser. Labor's losses in the first three years total over $100 billion (in constant 1980 dollars) for full decontrol and $70 billion for phased decontrol.

Holders of non-gas-related capital are small but steady losers. Their income is reduced every year for the entire 15 year period. The losses in income appear to be concentrated in industries which are presently under the greatest pressure -- automobiles, home building and agriculture. Those losses are greatest in the early years.[7]

2. Impact on Productivity and Gas Production

It is also important to recognize that, according to DOE's analysis, these effects of decontrol -- the small increase in the total pie and the much larger redistribution in income -- would occur without increasing the amount of natural gas produced and without increasing productivity in the economy (see Table 3). In fact, productivity would actually decline.

The loss of GNP due to the reduction in productivity that would result from decontrol would be between .5 and 1 percent over the 15 year period. The losses would be concentrated in the early years. Further, although decontrol would lead to greater supplies of gas in the early years, these would be offset by lower supplies in the later years and total supply over the period would be about 1 percent lower than under continuation of the Natural Gas Policy Act.

In sum, there could be no better example of a policy which is purely a redistributive scheme than natural gas decontrol. Unfortunately, although this decidedly negative message is buried in DOE's technical analysis, it is not fully reflected in DOE's presentation of the policy alternatives. Because it is not, the presentation of the policy alternative may mislead decisionmakers. The next section examines how the message was obscured.

Table 3

SUMMARY OF THE EFFECT OF DECONTROL ON PRODUCTIVITY AND NATURAL GAS PRODUCTION

	Changes in Productivity[1] (from base, in %)		Domestic Supply of Natural Gas[2] (in Billion Cubic Feet)		
	Full Decontrol	Accelerated/ Phased Decontrol	NGPA Unmodified	Full Decontrol	Accelerated/ Phased Decontrol (All New)
1982	- .32	- .13	18,147.6	18,426.9	18,243.9
1983	- .34	- .26	17,365.4	17,906.9	17,815.0
1984	- .37	- .34	16,881.8	17,611.5	17,544.2
1985	- .08	- .02	17,161.6	17,324.6	17,118.7
1986	- .07	.02	17,431.2	17,289.8	17,167.7
1987	- .03	.01	17,890.2	17,440.6	17,386.6
1988	- .02	- .01	17,884.3	17,539.2	17,524.6
1989	- .01	+ .01	17,803.8	17,436.7	17,364.4
1990	0	+ .03	17,649.7	17,144.5	17,185.2
1991	- .01	+ .01	17,487.9	17,108.5	17,161.6
1992	+ .02	+ .04	17,430.8	16,929.5	16,992.8
1993	+ .05	+ .01	17,266.3	16,926.2	16,996.8
1994	+ .04	+ .04	17,245.5	16,719.8	16,799.5
1995	+ .04	+ .04	17,164.7	16,655.8	16,734.8

[1] U.S. DOE, Macroeconomic Consequences, pp. I-39, I-45

[2] U.S. DOE, Two Market Analysis, Attachment 4.

B. DOE's Sleight of Hand

The negative implications of decontrol have been submerged by DOE because of its subjective interpretation and selective presentation of its own evidence. It has chosen as its central criterion for policy evaluation the behavior of potential GNP in the long term, rather than the behavior of actual GNP in the short and mid terms or the distributive effects of decontrol. Furthermore, it tailors the evidence presented to this preconception.

1. Differential Treatments of Changes in GNP

For example, the Department of Energy treats a $10 billion (discounted 1980 $) potential expansion in GNP over a 15 year period as a major benefit, while it treats a possible loss in GNP of $18 billion over a three year period as small and insignificant:

> Full decontrol in 1982 creates substantial efficiency benefits: $10 billion (NPV) compared to current policy and $41 billion (NPV) when compared to continued controls to 1995. These efficiency gains are significant and play an important role in the analysis of macroeconomic effects of full decontrol. The efficiency gains are robust with respect to varying assumptions about world oil prices and gas market conditions. 8
>
> Full decontrol of natural gas prices could also have short-term impacts on measured inflation, actual output, and unemployment. These effects are not likely to be large and should fade over time. . . . Immediate decontrol is also estimated to reduce real GNP by .2 to .6 percent ($6 to $18 billion in 1980 $) and raise the unemployment rate by .1 to .2 points in the first three years of decontrol. 9

In point of fact, the analysts who generated the numbers upon which DOE opted to base its analysis (because they come from a so-called supply-oriented model) stated quite the opposite. First, the report of these analysts repeatedly points out that both the potential aggregate GNP costs and benefits were quite small.

> None of the consequences of accelerated decontrol is large; the costs are relatively small and shortlived, while the benefits are even smaller but sustained. 10

Furthermore, the same report noted that one really had to go far out in the future to reverse the negative effects:

> It is important to note however, that the projection horizon must be extended to 1990 before the early losses are offset by subsequent gains. It takes about nine years for the overall effects to become positive (in present value terms). 11

2. Denial of Income Transfer Effects of Deregulation

Even more misleading in DOE's analysis is the fact that DOE simply denied the existence of the evidence on the distributive effects of the policy. DOE claims to be uncertain about those effects:

> Although the net benefits of full decontrol in 1982 are $10 billion (NPV), the distribution of the costs and benefits is likely to be uneven. It is difficult to estimate the magnitude and the distribution of these effects among different sectors of the economy, regions, and social and economic groups. The macroeconomic and efficiency analyses show that all families could be made better off as a result of decontrol. 12

The analysts who generated the numbers were emphatic and insistent about the distribution of costs and benefits:

> Thus, accelerated decontrol involves a relative shift of real income or purchasing power from the owners of labor services to the owners of capital services and, among the latter, from the owners of other capital assets to those having claims on the capital associated with domestic gas supply. 13

Other biases in DOE's analysis lie in its differential treatment of macroeconomic models and the shifting of time frames in which the models are applied.

The supply-side model, which has been little used for analysis such as this, is presented without discussion of its limitations or caveats. Needless to say, it produces the most favorable results. The more traditional models (referred to as demand-oriented) are criticized severely. There is really little reason to assume that the supply-side model is any less subject to doubt than the other models. In fact, as will be shown below, the differences between the models have been exaggerated and can be easily explained.

Furthermore, the most favorable model is run over a long time frame (for decontrol compared to present policies) in order to let small positive factors build up to erase the initial negative factors. The less favorable models, which begin to show small negative impacts in later years (for decontrol compared to present policies), are run over a shorter time frame. There are some very good reasons to believe that decontrol would lead to negative impacts relative to continuation of present policies in the late 1980s and after. As noted above, the continuation of present policies would bring more gas to market in that later period. Thus, the possibility that present policies will be preferable to decontrol in that period is real. The shifting of time frames in DOE's analysis obscures what may be a legitimate and important difference in the estimation of effects.

Amid this obfuscation it is difficult to assess properly the econometric results. A careful review of the output of all the models employed by DOE and the assumptions on which they are based shows that (1) they are not all that different and (2) the differences that exist are theoretically and technically explicable. The next section will analyze DOE's models with the objective of clarifying, rather than obscuring, their important features and pinpointing the message they send about supply-side economics in the natural gas market.

C. The Econometric Results

1. Similarities and Differences

For all the fuss made about differences between the supply-oriented and the demand-oriented approaches, there simply is not that much difference between the two sets of results for full decontrol (see Table 4). Over a comparable time frame (9 years), projected changes in GNP

Table 4

THE MACROECONOMIC EFFECTS OF FULL DECONTROL DEPICTED IN THREE DIFFERENT MODELS

(Change from Base Case) 1/

	GNP (Percent)			Inflation (Percentge Points)			Labor			Investment (Percent)		
	H/J	D	W	H/J	D	W	H/J 2/	D 3/	W 3/	H/J	D	W
1982	- .31	- .32	- .4	2.18	1.7	2.5	.01	.1	.2	3.81	-1.1	- .1
1983	- .24	- .61	- .4	- .33	.7	.4	- .03	.2	.1	3.28	-2.1	- .5
1984	- .19	- .43	- .2	- .24	.1	.2	- .05	.2	0	3.35	-1.4	1.8
1985	.13	.13	.4	-1.72	- .9	-2.0	- .11	0.0	- .3	.41	.1	3.1
1986	.17	.37	- .3	- .06	- .9	- .5	- .10	- .1	.1	.40	1.2	- .3
1987	.18	- .08	.1	- .06	.2	- .3	- .08	- .1	- .1	.31	.3	1.2
1988	.16	- .07	.1	0.0	.1	0.0	- .09	- .1	- .1	.21	0	1.6
1989	.17	- .13	0.0	- .02	- .1	- .2	- .08	0.0	- .1	1.2	- .1	1.0
1990	.18	- .17	- .2	- .01	- .1	0.0	- .07	0.1	.1	.16	-0.2	0.0
Cumulative Impacts	Billions of Constant 1980 $			% Change			Job Losses (in thousands)			Billions of Constant 1980 $		
3 year	-20.7	-39.7	-27.7	+1.61	+2.5	+3.1	100	500	300	46.10	-13.1	1.6
9 year	+10.8	-40.5	-24.0	-.3	.8	.1	700	300	0	54.0	-19.5	44.7

Explanatory Notes:

1/ H/J = Hudson/Jorgenson; W = Wharton; D = DRI
2/ Measured as percent decrease in labor supply.
3/ Measured as percentage point increase in unemployment.

range from +10.8 billion (constant 1980 $) to -40.5 billion (constant 1980 $). Although these numbers may sound large, they constitute less than one quarter of a percent of GNP. All models agree on fairly substantial negative GNP impacts in the first three years. The supply-side model predicts a loss of $20.7 billion, while the largest loss predicted by the demand side models is $39.7 billion. Again, the numbers may sound large, but they present a small fraction of GNP. Further, note that the direction of the predicted impact is the same -- negative.

The demand-oriented models produce slightly longer runs of increasing inflation in the early years. But all models predict a sizable increase in inflation. The three models differ somewhat in their predictions of the three year impact on inflation (increases ranging from +1.6 percentage points to +3.1 percentage points) and their nine year predictions (-.2 percentage points to +.4).

If there are major differences in the models, they occur in the labor and investment areas. The supply-side model shows a continuous and steady decrease in labor supply and a continuous increase in investment. The decrease in the labor supply is about 100,000 person years in the short term and 700,000 in the longer term. The increase in investment is on the order of $50 billion in both the short and long terms. By implication, investment in the model is treated as energy saving and labor saving.

The demand-side models show somewhat different patterns of unemployment and investment. There is a net increase in unemployment which parallels the net decrease in labor supply projected by the supply-side model. However, the pattern is somewhat different. The demand-oriented models show larger job losses in the short term (300,000-500,000) than in the long term (0-300,000). In the long term, there is a small decrease in investment in one demand-oriented model ($13 billion) and an increase in the other ($45 billion). There is a major difference in the short term effects of decontrol on investment in the demand-side models when compared to the supply-side models. The supply-oriented model shows a large rapid increase in investment, the demand-oriented models do not. One shows a very slight increase, the other shows a large decrease. The analysis of accelerated/phased decontrol exhibits similar patterns (see Table 5).

2. Explanation of the Differences

It is easy to attribute the different behavior of labor and investment to the basic philosophy underlying the models. The supply-side model was premised on a transfer of wealth from consumers (labor) to producers (investors) which was assumed to be productive. The differences in results are consistent with this philosophy. In fact, this philosophical difference is embodied in a simple technical assumption made by the

Table 5

THE MACROECONOMIC EFFECTS OF PHASED DECONTROL DEPICTED IN TWO DIFFERENT MODELS 1/
(Change from Base)

	GNP (Percent)		Inflation (Percentage Points)		Labor		Investment (Percent)	
	H/J	D	H/J	D	H/J^2	D^3	H/J	D
1982	- .12	- .03	-	.2	.01	0.0	1.53	-
1983	- .22	-.23	-	.8	- .01	.1	2.40	-
1984	- .23	- .51	-	.8	- .01	.2	3.22	-
1985	.13	- .29	-	- .9	- .08	.2	.50	-
1986	.18	+ .19	-	- .7	- .07	0.0	.51	-
1987	.16	+ .22	-	- .1	- .07	- .1	.34	-
1988	.14	.04	-	.1	- .07	- .1	.22	-
1989	.15	0.0	-	0.0	- .07	0.0	.21	-
1990	.16	- .03	-	- .1	- .06	0.0	.17	-

Cumulative Impacts	Billions of Constant 1980 $		% Change		Job Losses (in thousands)		Billions of Constant 1980 $	
3 Year	-16.3	-22.5	na	1.8	10	300	31.6	na
9 Year	+13.1	-18.1	na	.1	430	300	41.4	na

Explanatory Notes: 1/ H/J = Hudson/Jorgenson; W = Wharton
2/ Measured as percent decrease in labor supply
3/ Measured as percentage point increase in unemployment

authors of the econometric models. The supply-side model does not allow a price-wage-price spiral to occur:

> Further, no price-wage-price spiral mechanism is included. This limits the process of adjustment and, hence, the overall price impact to that which is solely attributable to the change in gas policy. 14

The demand-oriented models do permit price-wage-price spirals:

> In WAIFM [Wharton Annual and Industry Forecasting Model], all cost changes are passed through to the final product prices immediately. Consumers must pay higher gas bills and face higher prices for other goods and services. These direct and indirect price effects are only part of the final price increase. Seeing their real income fall, workers demand higher wages. Wage increases, in turn, increase the costs of production and product prices in future periods, generating a wage-price spiral. 15

As the supply-side analysts noted, excluding the price-wage-price spiral dampens the projected inflationary impact. In fact, it does much more. It also dampens the negative impact of decontrol on GNP (technically speaking, the aggregate supply curve does not shift as much as it would with the spiral mechanism). More importantly, the exclusion of a price-wage-price spiral ensures that labor will suffer a real loss in income. That is, it is necessary to preclude the spiral mechanism in order to shift resources to investors.

The so-called demand-oriented models actually assume that, in the short term, wages do not keep up. That is why the initial reduction in real income occurs. The models also assume that, in reality, in the long run, wages do try to keep up with prices. The difference between the models comes down to whether or not labor will respond to the increase in prices (and producer revenues) by attempting to offset their losses through wage increases and how effective labor will be in so doing. The supply-side model assumes that labor will be totally unsuccessful, even in the long run. The demand-side models assume that labor will not be successful in the very short run, but will be largely successful in the long run.

There are certainly other points of difference between the models, but this one difference should account for the majority of the differences in their output.

One can genuinely question the meaningfulness of conducting any analysis without some price-wage-price mechanisms. Although the supply-side analysts assert that omitting a price-wage-price spiral isolates the impact of decontrol, in fact it tests the impact of decontrol in a world that does not exist. The analysis excluding the price-wage-price mechanism would, at best, be an interesting sensitivity case, but it should not be the base case for drawing policy conclusions.

What makes this approach even more troubling is that DOE does not hesitate to criticize the so-called demand-oriented models for being unrealistic, and it did not hesitate to alter basic features of the models to make them accord with its conception of reality. To some extent, the alterations were called for. The models assumed, incorrectly, that industrial users are at their optimum use of gas; the models, therefore, predict incorrect responses to decontrol. DOE properly alters the assumptions and changes the direction of the models' responses.

Shouldn't DOE have exercised its judgment and modified the supply-side assumption which contends there is no price-wage-price mechanism? Such an assumption is certainly no more realistic than the assumptions in the demand-side models which DOE criticized and changed. In other words, doesn't the supply-side model assume, incorrectly, that there is no price-wage-price spiral and, therefore, make incorrect predictions?

The net effect is to render the overall conclusions reached by DOE quite unrealistic. In particular the positive effects of decontrol predicted by the unrealistic supply-side model must be questioned.

III. CONCLUSION

Having analyzed and interpreted the output of DOE's econometric models and reconciled some of the differences between them, it is important to stress again that we do not necessarily agree with DOE's specification of the input to those models. The output of the Gas Market Model, which is imposed on the econometric models, will be discussed in subsequent papers in CECA/RF's series. As noted above, this output repeatedly errs on the side of extreme optimism with respect to the effects of decontrol. If the optimistic assumptions prove unrealistic, then the negative impact of decontrol predicted by the macroeconomic models would be even larger.

Notwithstanding this note of caution, the message of overwhelming importance in DOE's analysis is that even with its optimistic assumptions, the negative impacts of the supply-side approach are undeniable. Massive transfers of wealth will occur, with little increase in GNP, no increase in gas supplies, declining productivity in the overall economy, and losses in income by most groups in society that dwarf any gains in GNP. The theoretical argument is trickle down in nature; the analytic work suggests the policy would be trickle up in effect.

FOOTNOTES

[1] U.S. Department of Energy, Residential Energy Consumption Survey, Part I, National Data, April 1981, Table 1.

[2] U.S. Department of Energy, Monthly Energy Review, October 1981, pp. 23, 25. This percentage is based on the industrial sector direct consumption for all energy except electricity plus the indirect consumption of natural gas for electricity generation.

[3] U.S. Department of Energy, A Study of Alternatives to the Natural Gas Policy Act of 1977, November 1981; Two Market Analysis of Natural Gas Decontrol: Appendix A, November 1981; Macroeconomic Consequences of Natural Gas Decontrol, Appendix C, November 1981.

[4] U.S. DOE, Two Market Analysis.

[5] U.S. DOE, Macroeconomic Consequences

[6] Hudson/Jorgenson Associates, contractor for DOE's supply-oriented study, states the argument tersely for the case of natural gas price decontrol. In the natural gas case, household consumption goes down, while industry income (therefore savings and investment) goes up (U.S. DOE, Macroeconomic Consequences, I-24):

> Accelerated decontrol promotes an expansion in the productive capacity of the economy as real investment in all years is higher than in the Reference or present policy case. . . . All other things being equal, the change in capital supply increases the output and real income that the economy can achieve. Indeed, this rise in capital availability is the principal mechanism that reduces the earlier economic costs and secures the continuing economic benefit of accelerated natural gas price decontrol.
>
> In the 1982 to 1984 period, private savings and investment increase substantially. There is a substantial rise in gas-related capital income, i.e., income to gas suppliers. That is reflected in higher dividends from and retained earnings in these industries. The upward movement in prices also leads to some increase in other capital income and nominal rates of return. From each of these sources there is a rise in private income. Decontrol leads to higher energy prices, to higher costs and to higher output prices, raising the

average price of consumption goods and services. Households increase their consumption outlays but not by enough to offset the higher prices (there is a small reduction in real consumption).

[7] Ibid., p. III-19.

[8] U.S. DOE, A Study of Alternatives, p. 23.

[9] Ibid., p. 27.

[10] U.S. DOE, Macroeconomic Consequences, p. I-15.

[11] Ibid., p. I-iii.

[12] U.S. DOE, A Study of Alternatives, p. 30.

[13] U.S. DOE, Macroeconomic Consequences, p. I-iii.

[14] Ibid., p. I-18.

[15] Ibid., p. III-10.

THE PAST AS PROLOGUE I

THE UNDERESTIMATION OF PRICE INCREASES IN THE DECONTROL DEBATE:

A Comparison of Oil and Natural Gas

Prepared by:

CONSUMER ENERGY COUNCIL OF AMERICA

RESEARCH FOUNDATION

February 18, 1982

CONTENTS

Page

Introduction 1

The Track Record of Oil Decontrol 2

Carter's Failure 3

Ford's Failure 6

Reagan's Failure 7

Natural Gas Price Projections 8

Price Increases and Economic Impacts 15

Summary and Conclusions 18

Footnotes 20

LIST OF ILLUSTRATIONS

Figure 1 4

Figure 2 9

Figure 3 10

THE PAST AS PROLOGUE I

THE UNDERESTIMATION OF PRICE INCREASES IN THE DECONTROL DEBATE:

A Comparison of Oil and Natural Gas

Introduction

One of the most critical issues in estimating the impact of energy price decontrol decisions is the projection of the magnitude of the price increase that will flow from each policy alternative. The size of the price increase determines the impact of decontrol on the economy and on the distribution of national wealth (equity). In other reports, the Consumer Energy Council of America Research Foundation (CECA/RF) analyzes the economic and equity impacts of rising energy prices. This report focuses on the issue of making realistic price projections. This must be the starting point for any impact analysis.

It should be noted at the outset that predicting energy price changes as a result of decontrol is an "iffy" business. Due to the fact that many unpredictable variables affect energy prices, projections typically have a wide margin of error. Moreover, matters are made worse by the fact that those who support decontrol of energy prices are likely to underestimate price increases; by the same token, those who oppose decontrol are likely to overestimate them. The combination of genuine uncertainty in the energy market and self-interested bias in much of the data makes it extremely difficult to sort out the good from the bad price projections.

Fortunately, however, we no longer have to approach energy price predictions in a vacuum. Over the past decade three different administrations have made energy decontrol decisions. There is a record of the predictions made prior to those decontrol decisions and the reality of the price increases that resulted from decontrol. By comparing the two, we can glean at least some idea of the magnitude of error in each set of predictions. Further, if the errors can be related to logical or systematic factors, our ability to predict future prices will be improved by analyzing and studying them. In particular, we can learn which assumptions appear to be most appropriate for making predictions.

In this report the Consumer Energy Council of America Research Foundation examines the track record of previous oil decontrol decisions and draws some implications for the analysis of natural gas decontrol.

The Track Record of Oil Decontrol

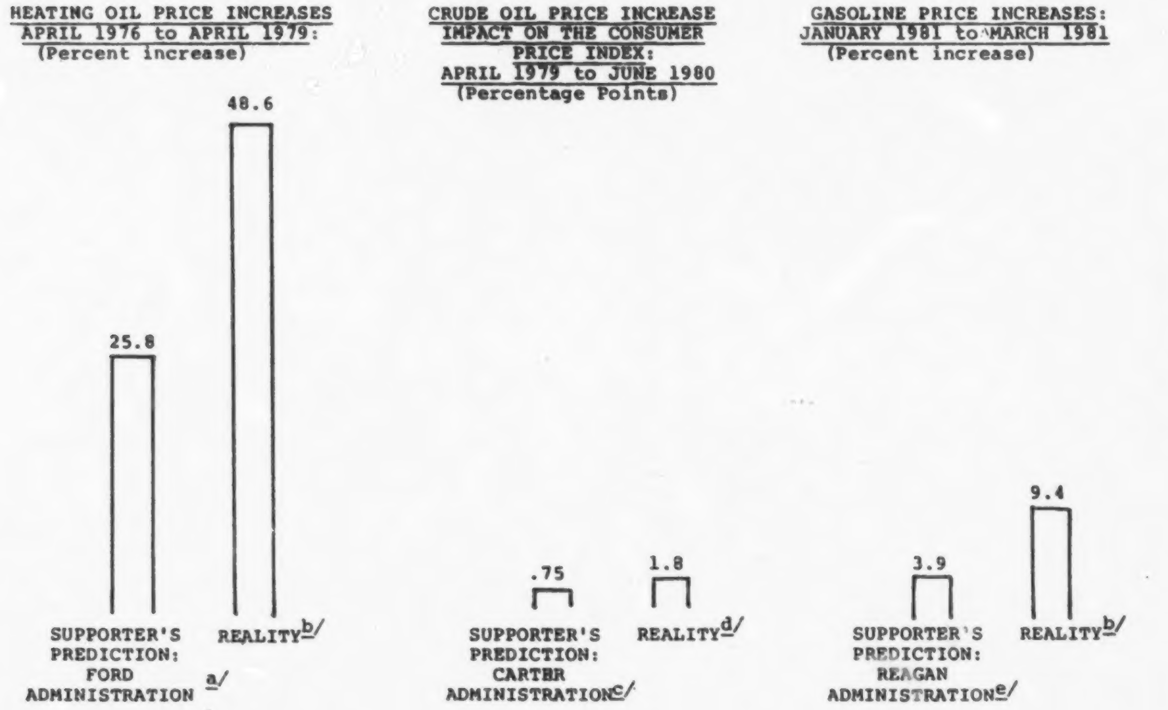
In 1976, the Ford Administration decontrolled heating oil prices. In 1979, the Carter Administration initiated the phased decontrol of crude oil prices. In 1981, the Reagan Administration finalized the decontrol of gasoline prices. (Actually, the Reagan Administration finalized the phase-in of crude oil price decontrol, but, since gasoline was the only controlled product at that time, in effect it decontrolled gasoline prices.) On each occasion a prediction was made about the price increase and/or the inflationary impact that would ensue. As Figure 1 shows, the record of those predictions is uniformly dismal. Predicted price increases were about one-half of the actual increases. Below CECA/RF examines the basis for the predictions and/or their errors in order to gain an important insight into energy pricing behavior.

Carter's Failure

The Carter Administration's failure to predict the impact of decontrol can be partly attributed to the erratic behavior of foreign oil prices, although one should not discount the role of domestic/ multinational oil corporations in paving the way for the supply shortage of 1979.[1] Nevertheless, a great deal of the rhetoric surrounding crude oil decontrol was that competitive pressures and the release of market forces would moderate price increases.[2] These forces certainly did not provide much price protection and one must question whether, in fact, they exist at all. However, because foreign oil prices were rising rapidly, the decontrol of crude oil under President Carter does not serve as a good test of whether market forces can moderate price increases in energy markets. On the two other occasions of oil decontrol, however, the errors in prediction cannot be attributed to foreign price increases.

FIGURE 1

COMPARING PREDICTED AND ACTUAL PRICE INCREASES ASSOCIATED WITH THE VARIOUS STAGES OF OIL DECONTROL



SOURCES: See following page

NOTES TO FIGURE 1

[a] Gorman Smith, "Hearings," Committee on Interstate and Foreign Commerce, H.R. Doc. No. 9121-131 (June 22, 1976), p. 38.

[b] MER, various issues.

[c] "Testimony of Charles L. Shultze, Chairman, Council of Economic Advisors, before the Joint Economic Committee, Subcommittee on Energy, U.S. Congress, April 25, 1979.

[d] Congressional Budget Office, letter from Alice M. Reinlin to Senator Edward M. Kennedy, "Impact of Enerlgy Prices and Inflation on American Families," hearings before the Subcommittee on Energy of the Joint Economic Committee, Congress of the United States, July 8, 1980.

[e] Wall Street Journal, "Decontrol of Oil Prices Expected Today," January 28, 1981.

Ford's Failure

The Ford Administration predicted that heating oil prices would go up by no more than the increase in the price of crude oil after they were decontrolled in May 1976.[3] That is, whatever happended to crude oil prices would happen to heating oil prices as well. Here there can be no question of external price shocks. The argument put forward at the time was that competition would prevent heating oil producers/distributors from raising prices higher than the increase in crude oil costs. The Administration contended that distributors of heating oil would compete both with one another and with alternative fuels to preserve and expand their markets. Therefore, they would put pressure on producers to hold the price of heating oil down. In fact, the oil industry found some way to create price increases twice as large as the crude oil increases.[4]

Analyses of the increases in heating oil prices in excess of the increase in crude prices show that between one-fifth and three-quarters of the increment was due to something other than increases in production or operating costs.[5] In other words, there appeared to be increases in profit margins. Thus, competitive pressures had once again failed to keep prices down. On the contrary, decontrol in the absence of competitive pressures seems to have enabled producers and refiners to increase their profits.

Reagan's Failure

In January 1981, the Reagan Administration finalized the decontrol of gasoline with the assurance that gasoline prices would rise, at most, by five cents a gallon.[6] The administration contended that competition at the pump would keep prices down. However, within less than two months, the actual price increase was more than double that amount.[7] Nothing unusual was going on in the world oil market at that moment -- in fact, prices were declining slightly and there were no regulations to blame, since oil was now completely decontrolled. Yet, prices went up by more than 12 cents a gallon.

Here it is important to address a myth that has grown up around the Reagan gasoline decontrol action of January 1981. The supporters of decontrol are fond of pointing out that after gasoline prices peaked in March 1981, they declined by 2.2 percent through October. A great victory for decontrol is claimed. The claim does not stand even a modest degree of scrutiny.

First, between May 1979, the month before decontrol of crude oil began, and March 1981, when gasoline prices "peaked," prices had risen by 60 cents a gallon (from $.791/gallon to $1.388/gallon). It is hardly a major victory if prices then drop by 3.5 cents or about one twentieth of the increase of the previous two years. Market forces cannot be very strong if it takes a near doubling of prices to get them to move downward a fraction.

Second, the fall in prices observed in 1981 seems to have been totally unrelated to decontrol. The year before Reagan's decontrol action, gasoline prices fell by 2 percent from their peak in July 1980 to their floor in November 1980 (see Figure 2). In fact, prices had been quite stable throughout the latter part of 1980, prior to Reagan decontrol. The Reagan decontrol action seems to have enabled gasoline prices to jump 12 cents, then follow their usual pattern of seasonal moderation. A careful look at the history of gasoline prices shows that in 1975, 1976, 1977, 1980 and 1981 there was a decline in gasoline prices -- ranging from 1 to 3 percent -- between their peak in the summer and their valley in the following winter.[8] The pattern appears to be seasonal rather than being related to decontrol. Thus, the victory that is claimed for decontrol is an illusion.

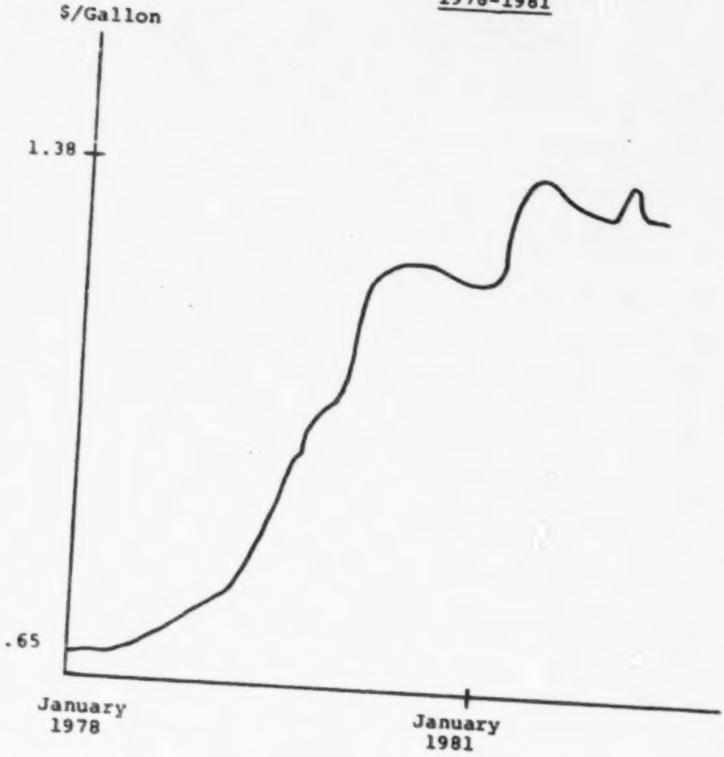
It appears that both Republican and Democratic administrations had seriously overestimated the strength of competitive and market forces and seriously underestimated the ability of the domestic energy industry to impose price increases in excess of what a competitive situation would have allowed.

Natural Gas Price Projections

Against this track record, the current flurry of predictions about natural gas decontrol is most interesting. Figure 3 presents a number of recent projections of the

FIGURE 2

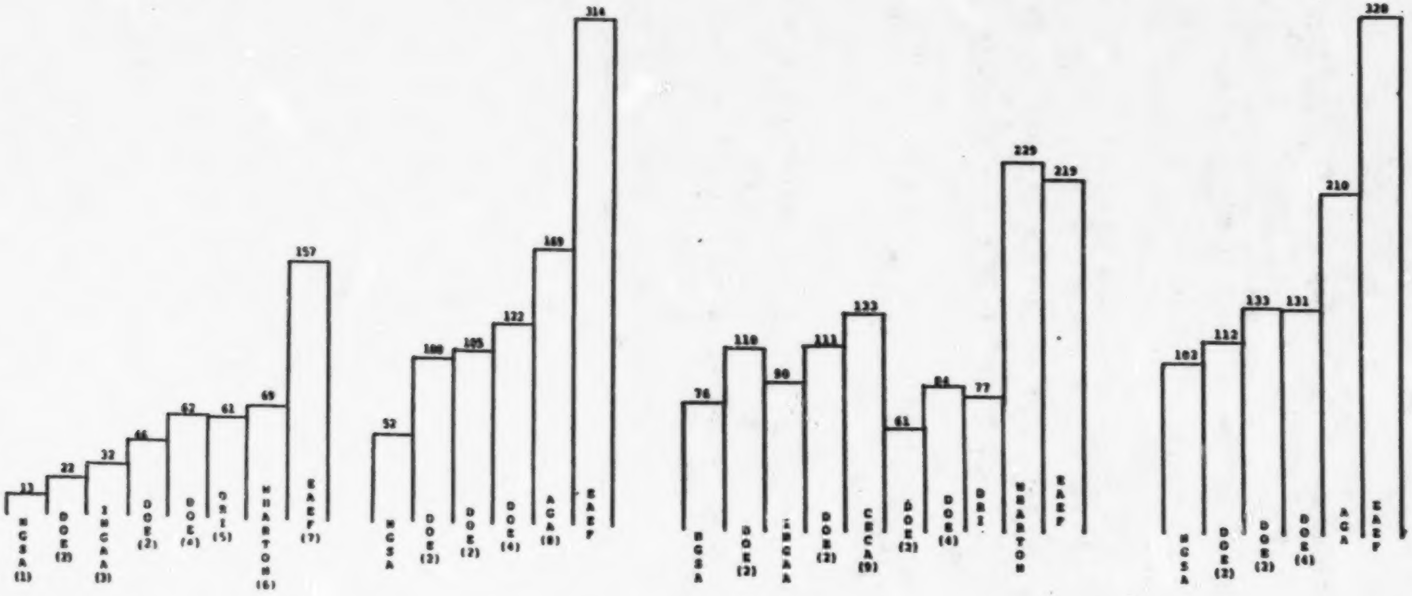
GASOLINE PRICES
1978-1981



SOURCE:
U.S. Department of Energy, Monthly Energy Review, various issues.

FIGURE 3

PRICE INCREASES PROJECTED AS A RESULT OF NATURAL GAS DECONTROL



PERCENTAGE REAL PRICE INCREASE IN THE FIRST YEAR AFTER DECONTROL

ACCELERATED DECONTROL

FULL DECONTROL

PERCENTAGE REAL PRICE INCREASE IN THE FIRST THREE YEARS AFTER DECONTROL

ACCELERATED DECONTROL

FULL DECONTROL

SOURCES:
See following page

NOTES TO FIGURE 3

[1] Glenn C. Loury, An Analysis of the Efficiency and Inflationary Impact of the Decontrol of Natural Gas Prices, (Natural Gas Supply Association [NGSA], April 1981). Full decontrol is Scenario 4. Accelerated decontrol is Senario 6. The latter is tantamount to a four year phase-in.

[2] U.S. Department of Energy, Two Market Analysis of Natural Gas Decontrol, Attachment 3, November 1981.

[3] Interstate Natural Gas Association of America, Analysis of Natural Gas Decontrol, December 1, 1981. Case J, which is the scenario preferred by INGAA (see Supplemental Statement on Behalf of the Interstate Natural Gas Association of America, Senate Committee on Energy and Natural Resources on the Implementation of Title I of the Natural Gas Policy Act, December 1, 1981).

[4] U.S. Department of Energy, Reducing U.S. Oil Vulnerability: Energy Policy for the 1980's (November 10, 1980), Chapter II.

[5] Mary H. Novak, "Natural Gas: Should the NGPA Be Reopened," Data Resources Inc., Spring 1981, Decontrol-1982 Scenario.

[6] Wharton Econometric Forcasting Associates, cited in Dun's Business Month, November 1981, p. 56.

[7] Energy Action Educational Foundation, The Decontrol of Natural Gas Prices: A Price American's Can't Afford (February 19, 1981).

[8] The American Gas Association, Cost of Immediate Total Wellhead Price Decontrol of Natural Gas to Low Income and Disadvantaged Groups, April 9, 1981.

[9] See Appendix A.

increase in average wellhead prices in the first year and the first three years following both accelerated decontrol and full decontrol. The range of estimates is extremely wide. The highest estimate for the first year increase under an accelerated decontrol scenario is more than ten times as large as the lowest. For full decontrol, the highest estimate of the first year increase is six times as large as the lowest. Estimates of the three year increases do not vary as widely. The highest estimated increase for accelerated decontrol is 3.7 times that of the lowest, while under full decontrol the highest estimate is 3.6 times the lowest.

Full decontrol and the three year accelerated decontrol estimates are probably better gauges of the differences of opinion about likely price increases than the estimates after just one year of accelerated decontrol. This is the case because the various accelerated decontrol scenarios which CECA/RF has reviewed are based on somewhat different assumptions about which categories of gas will be decontrolled and what the pace of decontrol will be. However, the accelerated scenarios begin to converge in the third year in terms of the quantities of gas decontrolled and the ceiling prices allowed, so that these price estimates are based on roughly comparable conditions.

As Figure 3 shows, supporters of decontrol (for example, the Natural Gas Supply Association [NGSA] and the Reagan Administration) project price increases that are one-half to one-third those of opponents of decontrol (the American Gas Association [AGA] and Energy Action Educational Foundation [EAEF]). Here the experience of prior oil and oil product decontrol actions is most instructive. Actual price increases generally have been 2 to 2> times larger than the price increases predicted by the various supporters of decontrol. Thus, based on recent history and the pattern of projections, it is a safe bet to assume that actual price increases will fall midway between the high and low estimates.

Splitting the difference is not simply a numbers game. Differences in price projections need not stem from blatant biases or erroneous calculations. In fact, it is easy to construct technically correct explanations for each set of predictions, i.e., explanations whose reasoning is correct, once their assumptions are granted.

Those who project low price estimates tend to assume 1) intense competition between suppliers leading to relatively elastic supply and 2) significant discretionary use of energy or easy substitution of capital for energy or easy switching between fuels, leading to relatively elastic demand. In short, there is an assumption that competitive market forces on both the supply and demand sides would keep prices down.

Those who project high price estimates tend to assume 1) much less competition between suppliers and 2) much less elasticity of demand. Simply put, there is an assumption that competitive market forces are weak and prices could run up sharply after decontrol.

In Appendix A, CECA/RF develops a detailed example of the behavior of the natural gas market under assumptions of restricted competition and inelastic demand based on the most recent analysis of the natural gas market developed by the Department of Energy.[9] The CECA/RF analysis shows that altering DOE's assumptions about competition and demand elasticity can lead to a predicted price of gas 15 percent higher than DOE's estimates in Figure 3. That would put the estimate of price increases close to twice as high as NGSA's.

For present purposes, let it suffice to say that one approach to take in resolving a difference of opinion about the state of competition in the market would be to observe the market in order to ascertain which set of assumptions best fits reality. Economists are fond of identifying those characteristics of the market which theoretically determine the level of competition (e.g., concentration ratios) and then calculating them for each energy market. However, prior research in this regard has not been conclusive. Another, more direct and empirical approach is to look at the history of price behavior subsequent to recent decontrol decisions. Rather than rely on some theoretical notion of what the market should do, CECA/RF charts what it has actually done in the recent past. Past predictions, which assumed highly competitive conditions, have been off by a factor of two.

And they are likely to be off in the future -- also by a factor of two.

Price Increases and Economic Impacts

As mentioned in the introduction, the concern over the magnitude of price increases has two points of real significance. That is, there are two major reasons why we worry so much about price increases. One reason involves the equity of price increases. When prices go up -- especially on domestically produced commodities -- some Americans lose and some gain. The higher the increases, the bigger the losses. The second reason involves the impact of price increases on general economic activity. When prices go up, economic activity tends to be reduced. If price projections are off by a factor of two, the estimation of impacts will be off as well. Each of these issues will be dealt with in separate reports by CECA/RF.[10] However, in the context of the history of price projections and price realities one important observation can be offered at this point that deals with the linkage between price increases and economic impacts.

One of the arguments being made in support of accelerated decontrol of natural gas is that it will avoid a "price shock" and therefore moderate the economic impact of rising prices. The severe disruptions associated with the oil price shock of 1979-80 are frequently the point of reference. That is, those who support phased accelerated decontrol think they can avoid a price shock similar to that of 1979-80, which occurred for oil. If that is the frame of reference, then the argument that accelerated decontrol of natural gas will cushion the economic blow is largely unfounded.

The pattern of price increases that will occur under accelerated phased decontrol of natural gas is very similar to the pattern of price increases that actually occurred during 1979-81. Although the causes of the crude oil price increases in 1979-80 are different than the causes of the projected natural gas price increases, the actual patterns of increases and their likely economic effects are similar and this is a point of overwhelming importance. Let us review each pattern of price increases in turn.

The oil price shock is commonly associated with an event, the Iranian revolution, and a subsequent rapid increase in crude oil prices. From the point of view of the domestic economy, however, this conception is completely wrong. For six months after the Iranian shutdown of January 1979, 70 percent of all domestic crude oil was under price controls.[11] In June 1979, the phased decontrol of domestic oil began. The net effect was not that crude oil prices jumped instantaneously; rather, they rose in a rapid, but steady fashion. There was no single price shock; there was a phased run-up in prices.[12] Specifically, between January 1979 and October 1981, refiner acquisition costs for crude oil increased from about $2.26 per million Btu ($13.11/bbl) to $6.02 per million Btu ($34.93/bbl). The average monthly increase (compounded) was 3.3 percent. The actual morth by month increases in prices were fairly even -- the average increase was 3.7 percent per month and 17 of the 29 monthly changes represented increases of between 2.1 percent and 7.2 percent. This is the price pattern that produced the negative economic impacts associated with the oil price shock.

Now let us contrast that historical record with the price trajectories projected for accelerated decontrol of natural gas. The price trajectory of natural gas decontrol will reflect two factors. Some gas will be decontrolled immediately (the most frequently discussed categories are all gas discovered after January 1, 1982 (referred to as "new-new gas") or all gas discovered after January 1, 1977 (referred to as "all new gas"). The remainder of the gas (referred to as "old gas") will be decontrolled in a phased fashion over a period of between 24 and 60 months, depending on which scenario is chosen and which categories are included.

According to the high and low estimates presented in Figure 3, the price trajectory that would result from decontrol is as follows: natural gas prices would go from about $2.30 per million Btus in January 1982 to a price between $7.00 and $8.50 per million Btus in January 1986. The average monthly price increases (compounded) would be between 2 and 3.3 percent. There would be a surge in the first year when monthly price increases would be between 3 and 4.2 percent (compounded). The highest price projection leads to a rate of increase in gas prices that is about 18 percent faster than that which occurred for oil. The low price projection leads to a rate of increase that is roughly 32 percent slower than the increase for oil. If reality falls between the two, one would expect a pattern of price increases that is quite close to that which occurred during the oil price shock. Such a pattern would mean that prices would increase at exactly the rate which occurred during the oil price shock.

To the extent that energy price increases present problems of structural adjustment in the economy (as opposed to simple surprises for which the economy is unprepared), not much relief can be expected from accelerated decontrol. Those structural problems and the magnitude of the impact of price increase will be the topic of another report in this series, but it is clear that the supporters of decontrol are mistaken if they believe that phased decontrol will cushion the blow.

Summary and Conclusions

In this report we have examined the history of price projections and the price realities that surround energy price decontrol decisions. We have found that, in the case of oil-related decontrol, the supporters grossly underestimated the increase in prices that occurred. Insofar as they repeatedly argued that competition would hold prices down, their dismal record of price projections suggests that competitive and market forces are weak.

Turning to the current projections of the impact of natural gas decontrol, we find a wide difference of opinion. The supporters of decontrol predict price increases one-third that of the opponents. If history is a guide, one can expect that the actual price increases will be twice as large as those predicted by the supporters.

Finally, we have examined the pattern of price increases that occurred during the "oil price shock" of 1979-80. We find the accelerated phased decontrol of natural gas will create a trajectory of price increases that is quite similar to that which occurred during the oil price shock. This clearly suggests that phasing-in decontrol will not avoid the severe negative economic impacts of rising energy prices that occurred during the oil price shock.

FOOTNOTES

[1] Official accounts absolve the major oil companies of all responsibility (see, for example, The Report of the Department of Justice to the President Covering the Gas Shortage of 1979 [Washington, DC: Goverment Printing Office, July 1980]) but there is ample evidence of their involvement (see Roots, Realities, Responsibilities: How the Major Oil Companies, Not OPEC, Tightened Oil Supplies and Initiated Price Hikes in 1978 and 1979 [Energy Action Educational Foundation, May 1980]).

[2] See, for example, "Testimony of Charles L. Shultze, Chairman, Council of Economic Advisors," before the Joint Economic Committee, Subcommittee on Energy, U.S. Congress, April 25, 1979.

[3] See, for example, testimony of Gorman Smith, before the U.S. Congress, Committee on Interstate and Foreign Commerce, H.R. Doc. No. 914-131 (June 22, 29, 1976), p. 38.

[4] U.S. Department of Energy (DOE), Monthly Energy Review, various issues.

[5] The lower estimate can be derived from DOE, Analysis of Refiner No. 2 Distillate Costs and Revenues, July 1976-June 1979, Tables 9 and 19 (September 1979). The higher estimate can be derived from the Consumer Energy Council of America, "Analysis of No. 2 Distillate Prices and Margins," presented before the U. S. Congress, House, Subcommittee on Environment, Energy and Natural Resources of the Government Operations Committee, February 12, 1980.

[6] See the comments of David Stockman, in "Decontrol of Oil Prices Expected Today," Wall Street Journal, January 28, 1981. Some industry analysts asserted that "we would be hesitant to sock on a 10-cent-a-gallon increase at once, the increase could come in stages at a rate a couple of cents a month." Others professed to believe that "almost nothing" would happen due to ample stocks which would face refiners' margins to shrink.

[7] MER, various issues.

[8] Ibid., various issues.

[9] U.S. Department of Energy, Two-Market Analysis of Natural Gas Decontrol (Washington, DC: Government Printing Office, November 1981).

[10] CECA/RF, "Natural Gas Price Deregulation: A Case of Trickle Up Economics" (January 20, 1982).

[11] The Congressional Budget Office, The Decontrol of Domestic Oil Prices: An Overview, May 1979, Chapter II.

[12] MER, various issues.

Appendix A

COMPETITIVE VERSUS OLIGOPOLY PRICING OF NATURAL GAS

or

How Big Does the Tail Have To Be To Wag the Dog?

an appendix to

The Past as Prologue I

The Underestimation of Price Increases in the Decontrol Debate

Prepared by:

CONSUMER ENERGY COUNCIL OF AMERICA

RESEARCH FOUNDATION

February 18, 1982

TABLE OF CONTENTS

Page

A. Introduction 1

B. Competition vs. Non Competition 3

C. The DOE Assumptions 6

  1. The Basic Approach 6
  2. The Theoretical Market Clearing Price 7

D. An Estimation of the Theoretical Market Clearing Price Under Competition 11

  1. The Demand Curve 11
  2. The Supply Curve 13
  3. The Market at Equilibrium 23

E. The Oligopoly Solution 27

F. Alternative Assumptions About Residential/Commercial Sector Demand 32

G. Summary and Conclusion 34

FOOTNOTES 37

LIST OF TABLES

Page

Table A.1
Percentage Distribution of Natural Gas Demand 9

Table A.2
The Competitive Wellhead Price of Natural Gas for Each User Category/Alternative Fuel Combination 12

Table A.3
Estimating Implicit Rates of Return for Various Categories of Natural Gas 18

Table A.4
Implicit Supply Elasticities in the Aggregate Natural Gas Market 24

Table A.5
Implicit Demand Elasticities in the Aggregate Natural Gas Market 26

LIST OF ILLUSTRATIONS

Page

Figure A.1
Price and Supply Under Assumptions of Competition and Monopoly 4

Figure A.2
Price Under Assumptions of Competitive and Oligopoly Behavior 5

Figure A.3
Maximum Potential Natural Gas Demand Curve 14

Figure A.4
The Department of Energy's Conceptual Demand Curve 15

Figure A.5
Marginal Cost Curve for Natural Gas 16

Figure A.6
An Estimated Supply Function for Crude Oil 21

Figure A.7
The Department of Energy's Conceptual Supply Curve 22

Figure A.8
The Oligopoly Price Compared to the Competitive Market Price 28

Figure A.9
The Oligopoly Price with Smoothed Demand Curves 30

Figure A.10
The Oligopoly Price with High Marginal Costs 31

Figure A.11
The Oligopoly Price with Conversion Costs in the Residential/Commercial Sectors 35

APPENDIX A

COMPETITIVE VERSUS OLIGOPOLY PRICING OF NATURAL GAS

or

How Big Does the Tail Have To Be
To Wag the Dog?

A. Introduction

The review of the recent history of the behavior of energy prices presented above has shown that history has been extremely unkind to those who assume that energy markets are highly competitive. Actual price increases have far outstripped their predictions, calling into question the soundness of the competition assumption. The review of natural gas decontrol price projections presented in "Past as Prologue I" has shown wide differences and we have suggested that these differences in price projections can be explained logically by differences in assumptions with respect to the extent of competition in the market. In this Appendix, we demonstrate that differences in assumptions can be translated empirically into differences in price projections.

Unfortunately, few of those who actually make the projections bother to present and defend their assumptions or to analyze what the impact of alternative assumptions would be. Above all, because price predictions tend to be highly political, most of those who make them are not at all inclined even to consider alternative assumptions that touch on matters as basic as competition. Moreover, most studies do not contain an adequate basis for undertaking such analyses. Thus, most studies simply state their assumptions and derive their conclusions without gathering evidence or demonstrating that supply and demand (either competitively or non-competitively) will reach equilibrium at the particular price they believe is correct.

The recent study by the Department of Energy[1] does have the necessary elements for considering alternative assumptions about competition, although DOE did not conduct such an analysis. In fact, DOE assumes a level of competition that is identical to the assumptions made by the gas producing industry and never questions these assumptions. Because the DOE study is likely to be of considerable importance in present and future decontrol debates, because it is one of the few with the necessary analytic elements, because DOE has blindly assumed competition, because recent price history has suggested an absence of competition, and because we believe that there is a considerable body of evidence to justify some skepticism of the assumption of a high degree of competition in the natural gas market,[2] this technical appendix compares the expected price under the assumptions of competition to the expected price under the asssumption of non-competition in the market.

B. Competition vs. Non Competition

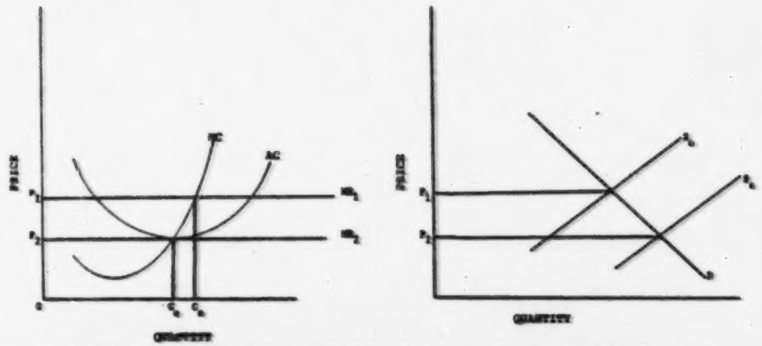
The basic tools needed to analyze pricing behavior under assumptions of a lack of competition can be found in the most elementary of economics texts. Figures A.1 and A.2 provide two simple discussions of why monopoly or oligopoly market conditions lead to lower quantities supplied and higher prices than competitive conditions. For those unfamiliar with the basic concepts, a careful reading of the explanations accompanying the figures will be helpful.

The essence of the argument rests on the demand curve which individual suppliers face. In a competitive situation, each supplier faces perfectly elastic demand and marginal revenue curves, since if the supplier raises prices above the market price, the supplier would lose his/her business to his/her competitors. Monopolists or oligopolists do not face perfectly inelastic demand curves. As they raise their prices, they lose only part of their business; since fewer competitors threaten their demand, their loss of demand is relatively small. They are willing to lose demand, as long as they increase profits by doing so. That is, they keep raising prices, even though they are losing business, because they make more profits by selling less at higher prices. In fact, all suppliers maximize profits at the point where marginal revenue equals marginal cost; but oligopolists maximize profits at higher prices and lower quantities supplied than those who face competition because they face a less than perfectly elastic (i.e., downwardly sloping) demand

FIGURE A.1

PRICE AND SUPPLY UNDER ASSUMPTIONS OF COMETITION AND MONOPOLY

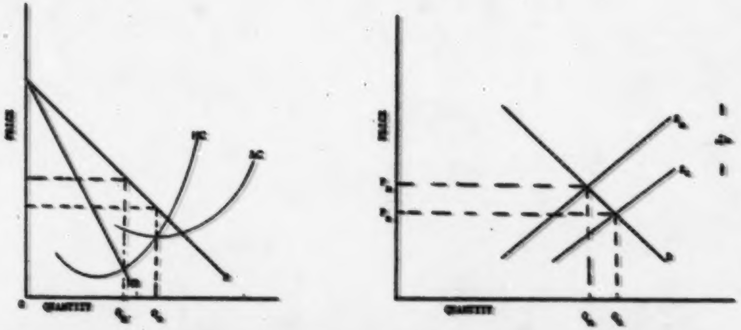
COMPETITION AND EFFICIENCY



At the market price of P_1, the firm chooses a level of output, C_1, where MR = MC. Since P is above AC, profits are earned. Entry occurs, pushing the market supply curve out to the right, and market price decreases. When market price falls to P_2, entry will cease. For the firm, MR = MC at C_2 (so profits are "maximized," the firm does the best it can given the circumstances); and there are no profits, since AC=P! The cost per unit produced is equal to the price the firm gets per unit sold. Revenues just cover costs. However, remember that costs include opportunity costs for the firm! Even though no economic profits are earned at this level of output, the firm still gets enough revenue to cover its opportunity costs (normal profits). So the firm will remain in business. But note what has happened. Due to competition and free entry, the firm has been forced to produce at that level of output that minimizes average cost!

Source: Tom Riddell, Steve Stamos and Jean Shackleford, Economics: A Tool for Understanding Society (Reading Mass.: Addison Wesley, 1979) pp. 167, 177-178.

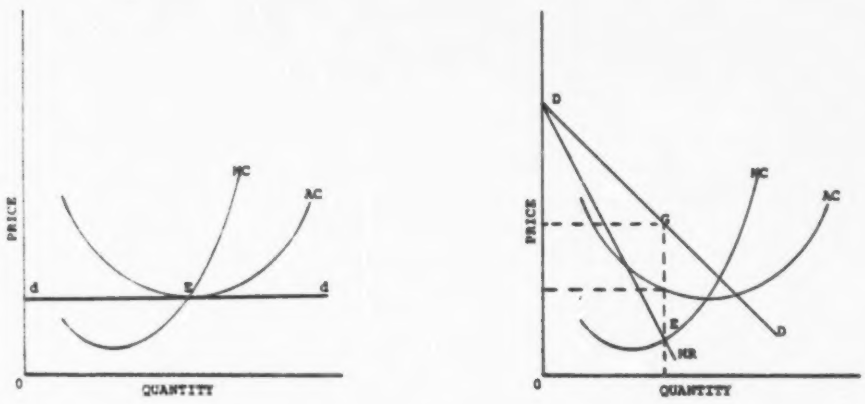
MONOPOLY OUTPUT RESTRICTION AND HIGH PRICE



What level of output will the monopoly choose to produce? It will produce Q_m, where MC = MR, because that level of output maximizes its profits. It will charge a price of P_m for that amount of output, because that is the price the market is willing to pay for that quantity. The monopoly is earning profits since P is well above AC. And the monopoly is producing at a rate of output that does not minimize average costs (Q_c is where AC is at a minimum). However, in a monopoly, when profits are being earned, there is no entry into the market, because there are no competitors. We can examine the theoretical results of this by focusing on the (aggregate market). If there were competition in the market, new firms would enter, market supply would increase to S_c, and market price would decrease to P_c. Thus, monopoly restricts output, since $Q_m < Q_c$. And monopoly charges higher prices, since $P_m > P_c$. Finally, monopolies earn monopoly profits. An important conclusion that can be drawn from the monopoly model is that the existence of market power (ability to control supply and prices) tends to prevent the occurrence of consumer sovereignty, the attainment of economic efficiency, and the operation of the invisible hand. The monopoly benefits at the expense of the society.

FIGURE A.2

PRICE UNDER ASSUMPTIONS OF COMPETITIVE AND OLIGOPOLY BEHAVIOR



PERFECT COMPETITION

OLIGOPOLIST'S EQUILIBRIUM

SAMUELSON OFFERS THE FOLLOWING DISCUSSION OF THE TWO SITUATIONS:[a]

> This typical perfect competitor is one of so many producers of an identical good that he/she faces a practically horizontal (infinitely elastic) demand (dd) curve, even though the industry's very much larger DD curve can be much more inelastic. If there is free entry and exit of well-informed firms who can replicate the cost conditions of any other firm, long-run equilibrium at E will involve no excess of profit over competitive costs (including properly computed implicit opportunity cost returns). Society is getting its total output most efficiently, in recognition of the P=MC condition, both in long and short runs. It is not forcing out of existing firms any output that could be obtained more cheaply by adding new firms.

> After experience with disastrous price wars, each of the few rivals that dominate a given market is almost sure to recognize that price cutting begets cancelling-out price cutting. So the typical oligopolist will estimate his/her demand curve DD by assuming others will be charging similar prices (and by taking into account the potential entry of other oligopolists). Since he/she gains little from extreme cutting of P, he/she will settle for sizable markup of P over MC.

[a] Paul Samuelson, Economics (New York: McGraw Hill, 1980), pp. 482, 485.

curve. This basic concept underlies all discussions of pricing under non-competitive conditions.

Thus, in order to estimate natural gas prices under either competitive or non-competitive assumptions, we must estimate the supply, marginal cost, demand, and marginal revenue curves.

C. The DOE Assumptions

1. The Basic Approach

The Department of Energy and the gas producing industry assume a partially competitive market. They assume that a price ceiling on natural gas is set by some alternative fuel. That is, they assume there exists a price above which suppliers of alternative forms of energy (e.g., oil) will be able to steal business from gas producers. Therefore, competition between fuels restrains the price increases of natural gas and sets the market clearing price.

If we assume a ceiling price on gas which is set by competition with oil we can establish a demand curve for gas. When the demand curve is coupled with a supply curve, we can analyze what the market price of gas would be under different assumptions about the pricing behavior of suppliers.

However, it should be noted that the market assumed by DOE is not a perfectly competitive market in the classic sense. DOE does not assume that suppliers of gas can exert significant downward pressure on the price of alternative fuels. That is, gas producers do not steal sufficient oil business by producing more gas at lower prices to force the oil suppliers to lower their prices. The fact that gas suppliers do not try to exert downward pressure on oil prices suggests that perfect competition is not present. This creates the possibility of extremely high profits on natural gas production because natural gas prices need not bear any relationship to the costs of producing natural gas. That is, entry into the energy industry does not occur to wipe out abnormal profits (see Figure A.1 above). Instead of the average price of all forms of energy being driven down to a point where only normal profits exist, DOE assumes that the price of gas rises and yields abnormal profits. In fact, as will be discussed below, DOE's analysis suggests that extremely high rates of profit exist on gas production. These rates of profit would not exist in a perfectly competitive world.

2. The Theoretical Market Clearing Price

The Department of Energy and the gas production industry both assume a partially competitive environment in which the price of gas at the wellhead is set by the cheapest competing fuel. The cheapest competing fuel is assumed to be high sulfur (#6) residual fuel oil used primarily in industrial boilers (including electric utility power plants). Consumers of #6 oil are assumed to set the marginal price both because that fuel is cheapest and because these industrial consumers tend to have the capacity to shift between fuels in the short term. At a minimum, they have adequate incentive to acquire that capacity, thereby threatening to switch fuels if the given price is not competitive. That is, they can or are willing to acquire the ability to burn either fuel at any moment. Therefore, they "play" the energy market to minimize costs.

They install dual fuel-burning capacity partly because they have been low priority "interruptible" users in the past (and have needed dual capacity in order to maintain production operations) and partly because they consume enough energy to make playing the energy market economically justifiable. That is, the volumes of energy they consume are so large that they can cover the costs (including normal profits) of installing dual fuel-burning equipment.

DOE assumes that the wellhead price of natural gas will be equal to the burner tip price of #6 fuel oil minus gas transmission and distribution costs. That is, the price of gas at the wellhead can be no higher than the price of the alternative at the burner tip net of the transmission and distribution costs, i.e., the costs of getting the gas from the wellhead to the burner tip. Recent estimates by DOE show that consumers of high sulfur #6 oil who are potential gas consumers account for less than 4 percent of the aggregate demand for gas (Residual D in Table A.1). However, because they are the marginal users in a competitive framework, they set the wellhead price.

Table A.1

PERCENTAGE DISTRUBTION OF NATURAL GAS DEMAND

Category and Alternative Fuel Type

Alternative Fuel	Residential		Commercial		Industrial Non-Boiler		Electric Utilities		Industrial Boiler		TOTAL[1]
	Inter-state	Intra-state	Inter-state	Intra-state	Inter-state	Intra-state	Inter-state	Intra-state	Inter-state	Intra-state	
Distillate	25.9	3.4	7.3	1.4	3.3	1.5	2.4	.8	.2	1.3	46.5
Residual A	0	0	3.3	.7	10.1	4.9	.7	.2	1.4	2.0	23.3
Residual B	0	0	3.3	.7	1.5	2.6	.9	8.4	.6	1.2	19.2
Residual C	0	0	0	0	1.0	.7	1.3	.2	1.0	1.4	5.6
Residual D	0	0	0	0	.3	.1	.6	.1	1.1	1.4	3.6
Residential ($2.00)	0	0	0	0	.3	.2	.6	.1	.4	.6	2.2

---

[1] Numbers may not add due to rounding.

Source: DOE, Two Market Analysis, p. A-88.

According to DOE, once the wellhead price is set at the margin by these consumers, then the burner tip price can be calculated for all other consumers. This is accomplished by taking the wellhead price and adding to it the transmission and distribution costs that apply to each user. In other words, the entire market is driven by competition at the margin for high sulfur fuel oil users.

If one questions the assumption that suppliers behave as though they were driven by competition to sell every cubic foot of gas that they can, then one must question whether high sulfur residual fuel oil should drive the wellhead price. Such a small percentage of demand may look like a very small tail to be wagging a big dog. Wouldn't producers be willing to lose 4 percent of their demand by raising their price, if the increased price would lead to an increase in total profits?

As we shall see, DOE's evidence suggests that, if producers behave in a non-competitive fashion, they can maximize profits by raising prices well above DOE's theoretical competitive market clearing price and sacrificing as much as 30 percent of the total demand.

The following analysis estimates the demand, marginal revenue and marginal cost curves projected for 1985 based on DOE's recent analysis of accelerated/phased decontrol. Because the data are taken directly from published DOE materials, the analysis embodies DOE's assumptions and relies on considerable interpolation of DOE's results. Nevertheless, it makes the point quite clearly.

D. An Estimation of the Theoretical Market Clearing Price under Competition

1. The Demand Curve

In order to create the demand curve for natural gas, we begin by identifying the quantity of gas demanded by a series of specific categories of users (see Table A.1 above). User categories are identified by (1) the end use to which the fuel is put (residential, commercial, industrial non-boiler, industrial boiler and electric utility), (2) the pipeline market (interstate versus intrastate) and (3) the alternative fuel (distillate, 4 grades of residual oil and the lowest grade [highest sulfur] residual minus $2.00). There are 44 combinations of end uses/pipeline markets/alternative fuels and these are used as data points for the estimation of the demand curve. End use type, pipeline market and alternative fuel are chosen to define the categories of users because they are the most critical determinants of the wellhead price of natural gas that would compete with alternatives at the burner tip.

In the next step, we calculate the wellhead natural gas price that would just capture the business of each user category. That is, we create a second matrix by calculating the burner tip price of the alternative fuel minus the transmission and distribution costs implicit in DOE's analysis for each specific user category (see Table A.2).

Table A.2

The Competitive Wellhead Price of Natural Gas for Each User Category/Alternative Fuel Combination

Alternative Fuel	Transmission & Distribution Costs	Residential		Commercial		Industrial Non-Boiler		Electric Utilities		Industrial Boilers	
		Inter-State	Intra-State	Inter-State	Intra-State	Inter-State	Intra-State	Inter-State	Intra-State	Inter-State	Intra-State
Distillate	7.13	5.08	5.79	5.36	6.10	6.00	6.69	5.95	6.77	6.16	6.16
Residual A	6.17	na	na	4.40	6.14	5.04	5.73	4.99	5.81	5.20	5.20
Residual B	5.71	na	na	3.94	4.68	4.58	5.27	4.53	5.35	4.74	4.74
Residual C	5.55	na	na	na	na	4.42	5.11	4.37	5.19	4.58	4.58
Residual D	5.36	na	na	na	na	4.23	4.92	4.18	5.00	4.39	4.39
Residual D minus $2.00	3.36	na	na	na	na	2.25	2.92	2.18	2.00	2.39	2.39

Source: DOE, Two Market Analysis, Attachment IV.

The burner tip price of the alternative fuel minus transmission and distribution costs equals the wellhead price that would be just competitive with the alternative.

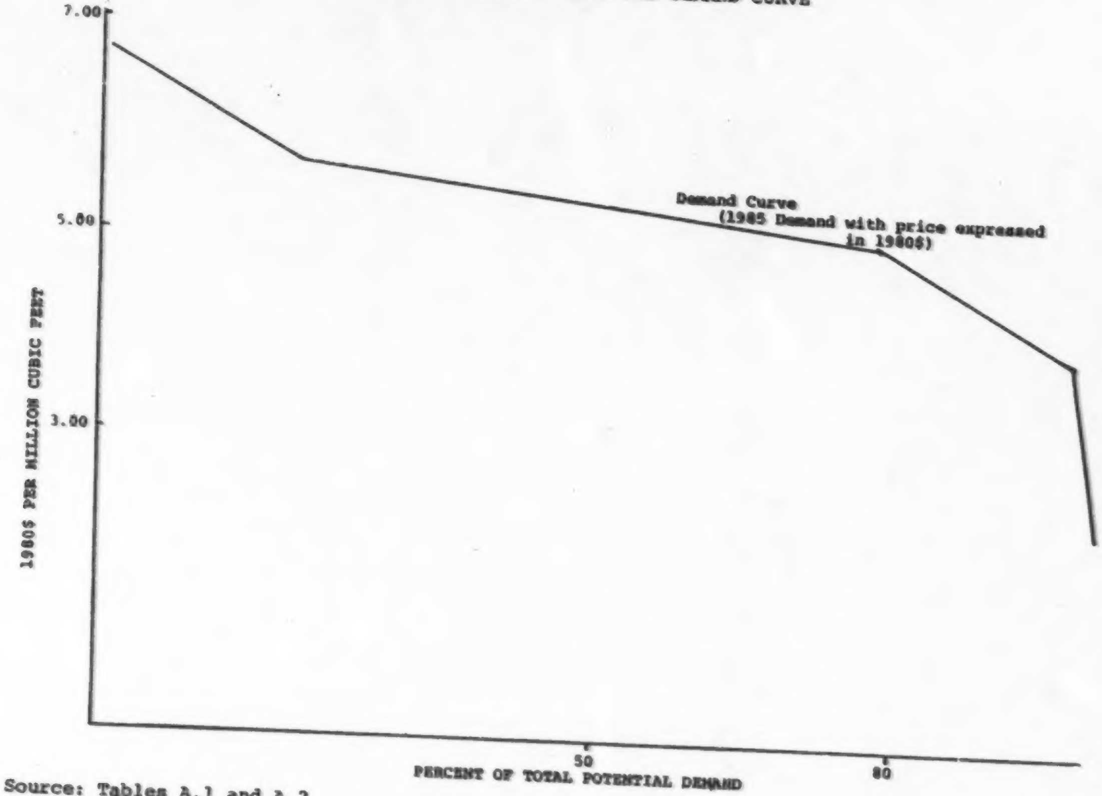
The demand curve that results (see Figure A.3) exhibits a shape that is quite familiar. In fact, it is not unlike the demand curve depicted by DOE in its conceptual discussions of the natural gas market (see Figure A.4). However, the point at which demand becomes inelastic for the second time, the point at which the curve turns down for the second time, occurs at a higher price than in DOE's conceptual curve. The difference in shape is significant for two reasons which will be elaborated below. First, it makes the benefits of oligopoly pricing secure. That is, the benefits are impervious to (or "robust" with respect to) the assumptions made about the shape of the marginal cost curve. Second, it also has major implications for the behavior of the market, even if competition is assumed. The steepness of the demand curve at prices below $5.00 means that the market will not be very responsive to price changes.

2. The Supply Curve

The second curve necessary to calculate the market equilibrium and/or the point of maximum profit for oligopolists is the marginal cost (supply) curve (see Figure A.5). DOE gives 1980 marginal costs in 1980 $/mcf for four categories of domestically produced gas -- associated ("no

FIGURE A.3

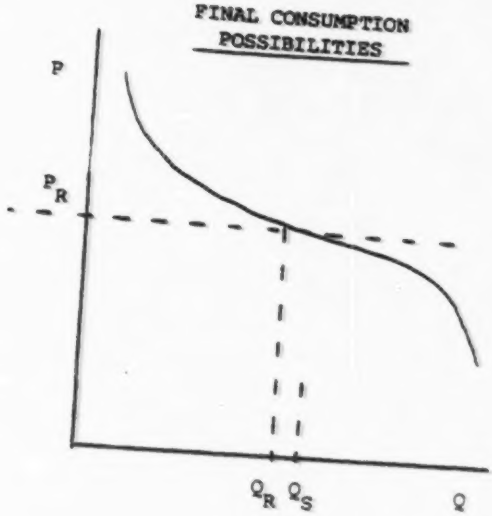
MAXIMUM POTENTIAL NATURAL GAS DEMAND CURVE



Source: Tables A.1 and A.2

FIGURE A.4

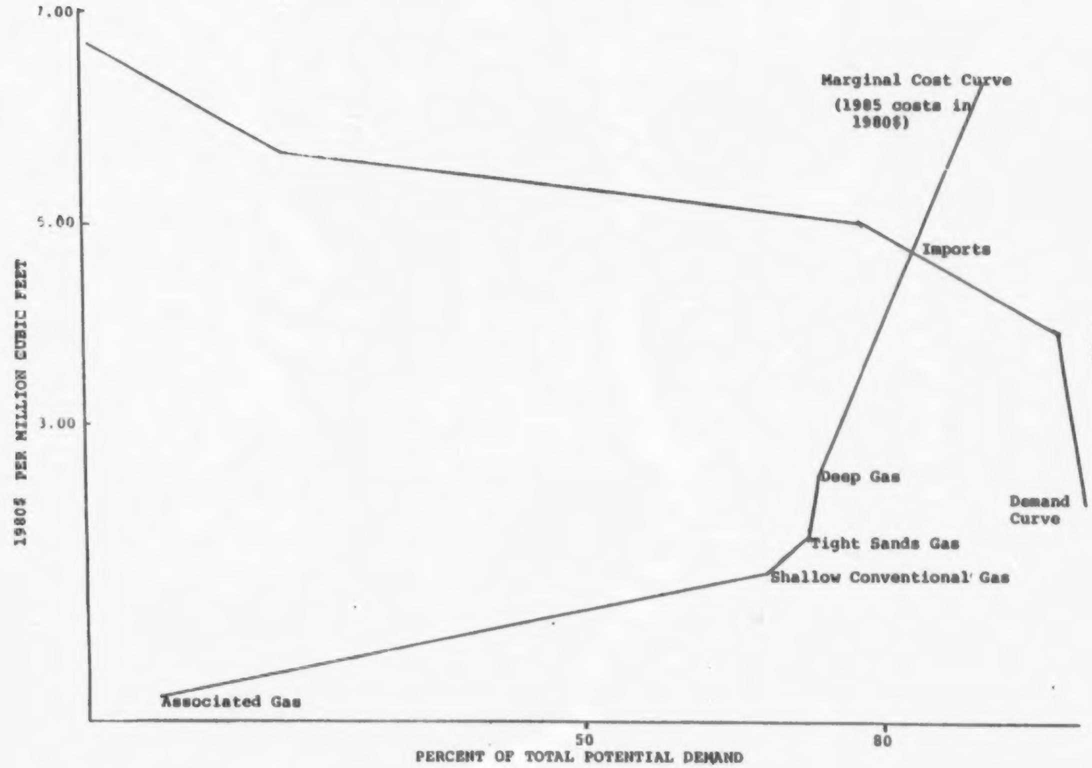
THE DEPARTMENT OF ENERGY'S CONCEPTUAL DEMAND CURVE



Source: DOE, Two Market Analysis, p. A-97

FIGURE A.5

MARGINAL COST CURVE FOR NATURAL GAS



Source: See text

cost"), shallow conventional ($1.24), tight gas ($1.50) and deep gas ($2.15).

Since all prices used to plot the demand curve are 1985 prices stated in 1980 $/mcf, the costs are stated on the same basis for both demand and supply. However, the supply costs are estimated for 1980, not 1985. Therefore, it is necessary to calculate marginal costs for 1985.

Marginal costs will rise over time and DOE assumes they will rise as a function of the declining success rate of natural gas exploration. If success rates change differently for each category of gas exploration, then the shape of the marginal cost curve could change. However, for the base case, DOE assumed a real 2.5 percent increase in marginal costs per year. This leaves the shape of the curve largely unaffected. For the purposes of moving five years into the future, this would appear to be a reasonable assumption. The marginal cost curve shown in Figure A.5 includes this 2.5 percent per year real price increase for the five years between 1980 and 1985.

Here it should be noted that DOE's initial marginal costs for 1980 include an 8 percent real rate of return (normal profits). However, if we compare the initial marginal cost to the actual prices being allowed or paid in the market in 1980, we discover that the rate of return is much higher than 8 percent (see Table A.3). The initial marginal cost estimates imply actual costs (costs before profits are added) of $1.14/mcf for conventional shallow gas,

Table A.3

ESTIMATING IMPLICIT RATES OF RETURN FOR VARIOUS CATEGORIES OF NATURAL GAS

	(1) Initial Marginal (1980$ mcf)	(2) Profit (8% real)	(3) Cost [(3)=(1)-(2)]	(4) Ceiling[d] Price (1980$ mcf)	(5) Production[d] Taxes (7%)	(6) Additional[d] Costs	(7) Net Producer Revenues [(7)=(4)-(5)-(6)]	(8) Implicit Rule of [(8)=(7)-(3)/(3)]
Shallow Conventional[a]	1.24	.10	1.14	2.47	.16	.03	2.28	100
Tight Sands[b]	1.50	.11	1.39	4.92	.32	.03	4.57	229
Deep Gas[c]	2.15	.16	1.99	6.80	.48	.03	6.29	

Source: DOE, Two Market Analysis, as follows:

[a] Weighted average of regional marginal costs in Figure III-6, p. A-20.

[b] P. A-54.

[c] P. A-53.

[d] Attachment 2,p. 2-2.

$1.39/mcf for tight sands gas and $1.99/mcf for deep gas. The ceiling prices allowed for these types of gas imply revenues to producers (i.e., the market price of gas net of severance and other production taxes as well as cost add-ons) of $2.28/mcf for shallow gas, $4.57/mcf for tight sands gas and $6.29/mcf for deep gas (assuming deep gas can get the interstate marginal price that DOE assumes for 1981). The implicit rates of return (before income taxes) are 100 percent for shallow gas, 229 percent for tight gas and 216 percent for deep gas.

These extremely high rates of return are the result of the absence of pressure to drive prices below the effective ceilings which oil prices (and NGPA) allow. As discussed above, the fundamental market process which should drive prices down in a competitive economy -- the free entry of firms willing and able to produce gas at the average rate of return in the economy, thereby lowering the price and the rate of profit -- is obviously not working.

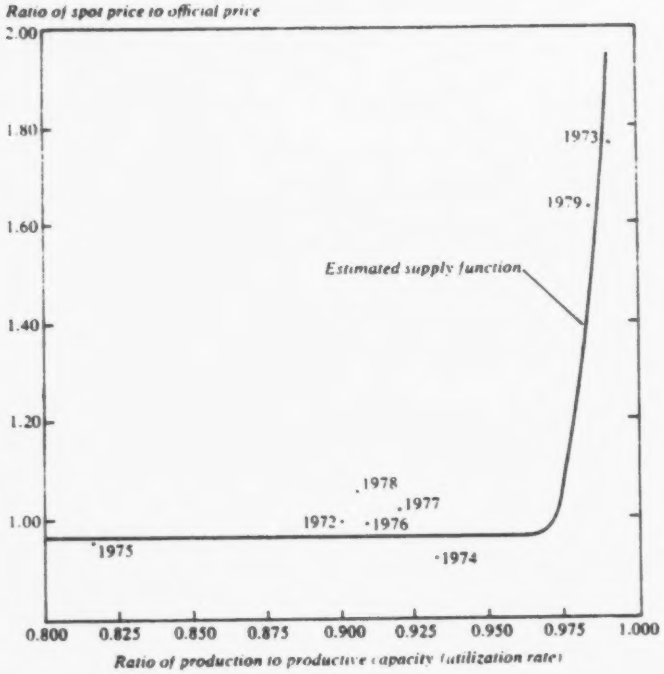
In fact, in DOE's model, domestic production never is able to meet domestic demand and, therefore, imports enter the market. However, those who export gas to the United States behave at least as silent partners in the oligopoly and do not try to steal more business by moving their prices down to undercut the abnormal profits of American producers. Indeed, they set their price at the theoretical marginal price -- the alternative fuel price. In DOE's analysis, this is $4.69/mcf (1980 $).

The marginal costs cited above generate a curve with a very shallow slope until conventional production is exhausted (on an annual basis) and a very steep slope thereafter. Interestingly, economist William Nordhaus has recently drawn a supply curve for the oil market with a similar shape (see Figure A.6). This curve is not unlike the curve DOE uses in its conceptual discussion (see Figure A.7). However, note that the slope of the actual curve derived from DOE's data is much more inelastic (steep) after the point of "inflection." Again, this difference in shape has two points of significance which will be elaborated below. First, it makes the potential benefits of oligopoly relatively secure. That is, the benefits are impervious to (or robust with respect to) the assumptions made about the shape of the demand curve. Second, it has important implications for market behavior even under the assumption of competition. It means that the market will not be very responsive to price changes.

DOE's model is "solved" at $4.69/mcf -- the equivalent of the lowest priced alternative (net of transmission and distribution costs). The market settles at a point at which about 16 percent of the maximum potential demand is not captured by gas producers. That is, 16 percent of the potential demand is allowed to slip away to alternative fuels.

FIGURE A.6

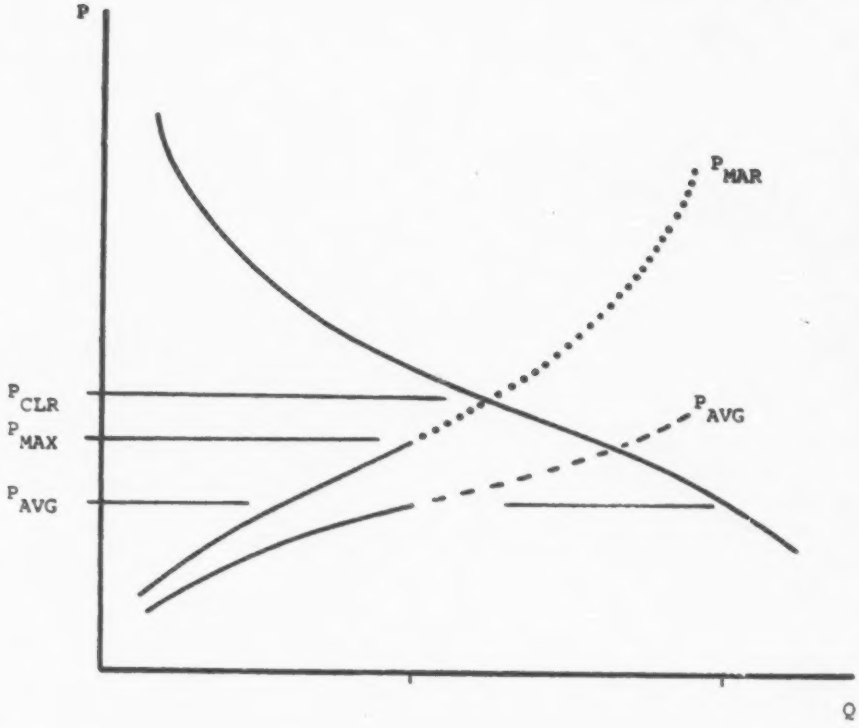
AN ESTIMATED SUPPLY FUNCTION FOR CRUDE OIL



Source: William Nordhaus, "Oil and Economic Performance in Industrial Countries," Brookings Papers on Economic Activity, 2, 1980, p. 369.

FIGURE A.7

THE DEPARTMENT OF ENERGY'S
CONCEPTUAL SUPPLY CURVE



Source: DOE, Two Market Analysis, p. A.99

3. The Market at Equilibrium

As noted above, the shapes of the supply and demand curves have important implications for the behavior of the natural gas market, even under assumptions of competition. Because the curves are so steep, i.e., inelastic, the market will not be very responsive to price changes. Neither demand nor supply will be changed much, even in the face of relatively large price increases. This insensitivity to price changes, even under the assumptions of competition, deserves further empirical analysis.

Even in DOE's analysis, in the long run, the supply elasticity is very small. Every decontrol scenario leads to a lower total supply than a continuation of NGPA. Furthermore, in the short run, DOE's analysis shows very small supply responses to price increases. Table A.4 shows the calculation of the aggregate market elasticity that DOE projects for accelerated phased decontrol, when compared to a continuation of NGPA. It can be seen that the price elasticity of supply is less than .07 in all years and the average is only .04. That is extremely small. DOE's data is intended to test comparisons between scenarios within years (e.g., NGPA compared to accelerated decontrol in 1983). However, the conclusion about supply elasticity stands up when the data is looked at in another way. For example, note that the supply elasticity between the year before decontrol and the year after decontrol under NGPA (compare 1984 to 1985) is only .039 percent.

Table A.4

IMPLICIT SUPPLY ELASTICITIES IN THE AGGREGATE NATURAL GAS MARKET

	NGPA Base Case			Accelerated/Phased Decontrol (All New Scenario)			
	(1) Wellhead Price (1980$/mcf)	(2) Domestic Demand (BCF)	(3) Wellhead Price (1980$/mcf)	(4) Domestic Demand (BCF)	(5) % Price Difference (5)=[(3)-(1)]/(1)	(6) % Demand Difference (6)=[(2)-(4)]/(4)	(7) Implicit Elasticity (7)=(6)/(5)
1982	2.27	17737.6	3.05	18033.9	34.3	.5	.015
1983	2.42	17155.0	3.81	17605.0	57.4	2.6	.045
1984	2.61	16671.7	4.42	17440.5	69.4	4.6	.066
1985	4.45	17131.6	4.69	17088.7	-		

Source: DOE, Two Market Analysis, Attachment IV.

Calculation of the demand elasticity is more complex since there is a great deal of fuel switching that goes on in the gas market. Industrial users of oil switch to gas as do some residential consumers. Table A.5 presents a calculation of the implicit demand elasticities in the aggregate gas market that DOE projects for accelerated decontrol. In order to take account of fuel switching, the demand utilized as the basis for the calculations is the maximum potential gas demand, i.e., the total energy consumed by all potential gas users. Since the oil price is identical for all scenarios, any change in demand must be due to changes in the natural gas price and changes in the mix of oil and gas used by the aggregate of consumers. That is, if some oil consumers switch to gas, they may pay a price that is lower than they would have paid for oil. Their effective price is lower and their demand will be higher. The aggregate price paid by all consumers would also be lower. To compensate for this shift in the mix of fuels, we have calculated an "effective" average energy price for all potential gas consumers under NGPA and used it as the basis for calculating demand elasticities.

It will be noted that demand elasticities are somewhat higher than the supply elasticities, ranging from .088 to .184 and averaging about .14. The implicit elasticity for the year in which decontrol begins under NGPA is .18. These elasticities are consistent with other estimates.[3] They are also quite low compared to other commodities.

Table A.5

IMPLICIT DEMAND ELASTICITIES IN THE AGGREGATE NATURAL GAS MARKET

	NGPA Base Case			Accelerated/Phased Decontrol (All New Scenario)		Estimating the Elasticity		
	(1) Wellhead Price (1980$/mcf)	(2) Effective Wellhead Price	(3) Domestic Demand (BCF)	(4) Wellhead Price (1980$/mcf)	(5) Domestic Demand (BCF)	(6) % Price Difference (6)=(4)-(2)/(2)x100]	(7) % Demand Difference [(7)=(3)-(5)/(2)x100]	(8) Implicit Elasticity (8=7/6)
1982	2.27	2.44	22908.7	3.05	22495.1	25.0	-2.2	-.088
1983	2.42	2.54	22659.1	3.81	20754.1	50.0	-9.2	-.184
1984	2.61	2.72	2268.6	4.42	20461.6	62.5	-9.3	-.149
1985	4.45	4.02	20438.0	4.69	—	-	-	-

Source: DOE, Two Market Analysis, Attachment IV.

Thus, the shapes of the supply and demand curves do not resemble the classical, moderately elastic straight lines typically used to depict "competitive" situations. Any theoretical conclusions drawn about typical competitive situations on the basis of those typical curves should *not* be extrapolated to the natural gas market. Above all, one must not assume a great deal of price sensitivity even where competition is assumed. The implications of these steeply sloping supply and demand curves (when compared to the classical curves of competitive supply and demand), which are explored in other reports in this series, are:

1. Total supply under decontrol *is not greater than* under a continuation of NGPA, even though prices are higher, because supply responses are small.
2. The equity loses that one might predict for decontrol are *larger* than expected because demand responses are small and consumers bear more of the burden than expected.
3. The efficiency gains that one might predict for decontrol are *smaller* than expected because supply and demand responses are smaller than expected.

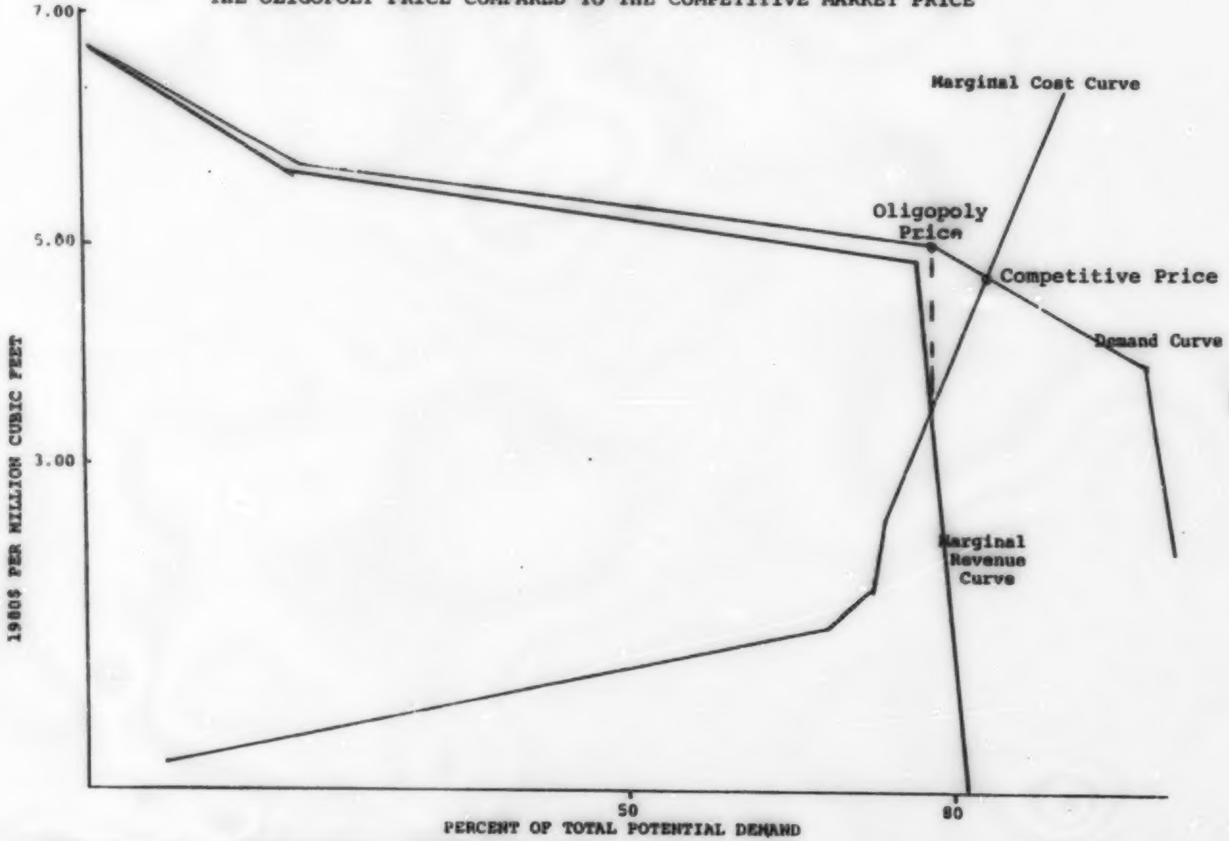
Having examined the implications of the shape of the supply and demand curves for the analysis when competitive behavior is assumed, we turn next to the analysis of situations in which non-competitive behaviors are assumed.

E. *The Oligopoly Solution*

If producers behave rationally, they will examine their marginal cost and marginal revenue curves in order to choose the price/quantity combination which will maximize profits. If they are oligopolists or monopolists, each

FIGURE A.8

THE OLIGOPOLY PRICE COMPARED TO THE COMPETITIVE MARKET PRICE



Source: Table A.1 and A.2.

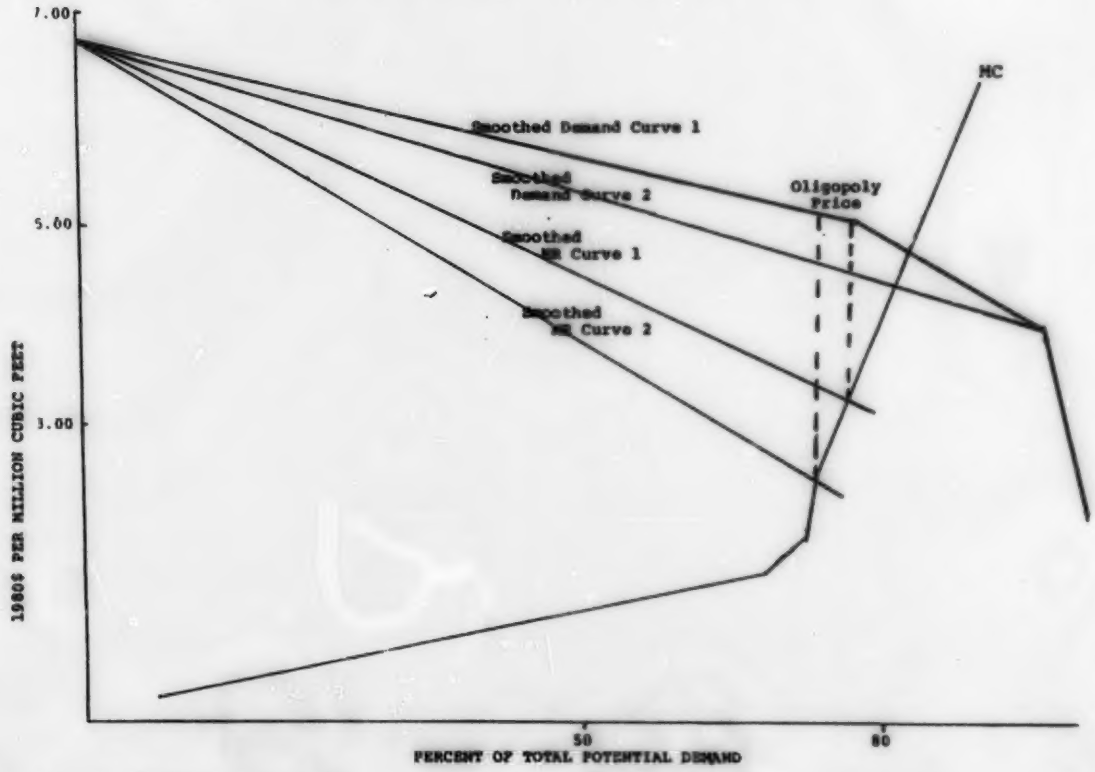
producer will not face a perfectly elastic demand curve. In fact, each oligopolist will face a demand curve that has a slope some place between the market demand curve and a perfectly flat demand curve. For purposes of this analysis, we will assume that each producer faces a demand curve with the slope of the market demand curve. This would fit a strict monopoly or a number of oligopoly arrangements.

In order to arrive at the monopoly (oligopoly) price, we must calculate the marginal revenue curve (see Figure A.8). Because the actual data is not smooth, the marginal revenue calculations are somewhat erratic, but an actual plot of the curve shows that the point where marginal costs equal marginal revenues is around the $5.00 point. Several smooth curves yield almost identical results (see Figure A.9).

Because both the marginal cost and marginal revenue curves are so steep, this point of market equilibrium under oligopoly behavior is quite robust. That is, if we were to assume that the shape of one of the curves was different, or we were to shift either curve up or down, the result would be largely unaffected. For example, Figure A.10 shows the analysis with the marginal cost curve calculated assuming marginal costs escalated at 15 percent (real) per year (but holding import prices constant). The oligopoly price would be altered little, ranging from $5.00 to $5.10, depending on which specification of the marginal revenue curve is used. If import prices escalate at 15 percent per year, the results still are about the same.

FIGURE A.9

THE OLIGOPOLY PRICE WITH SMOOTHED DEMAND CURVES

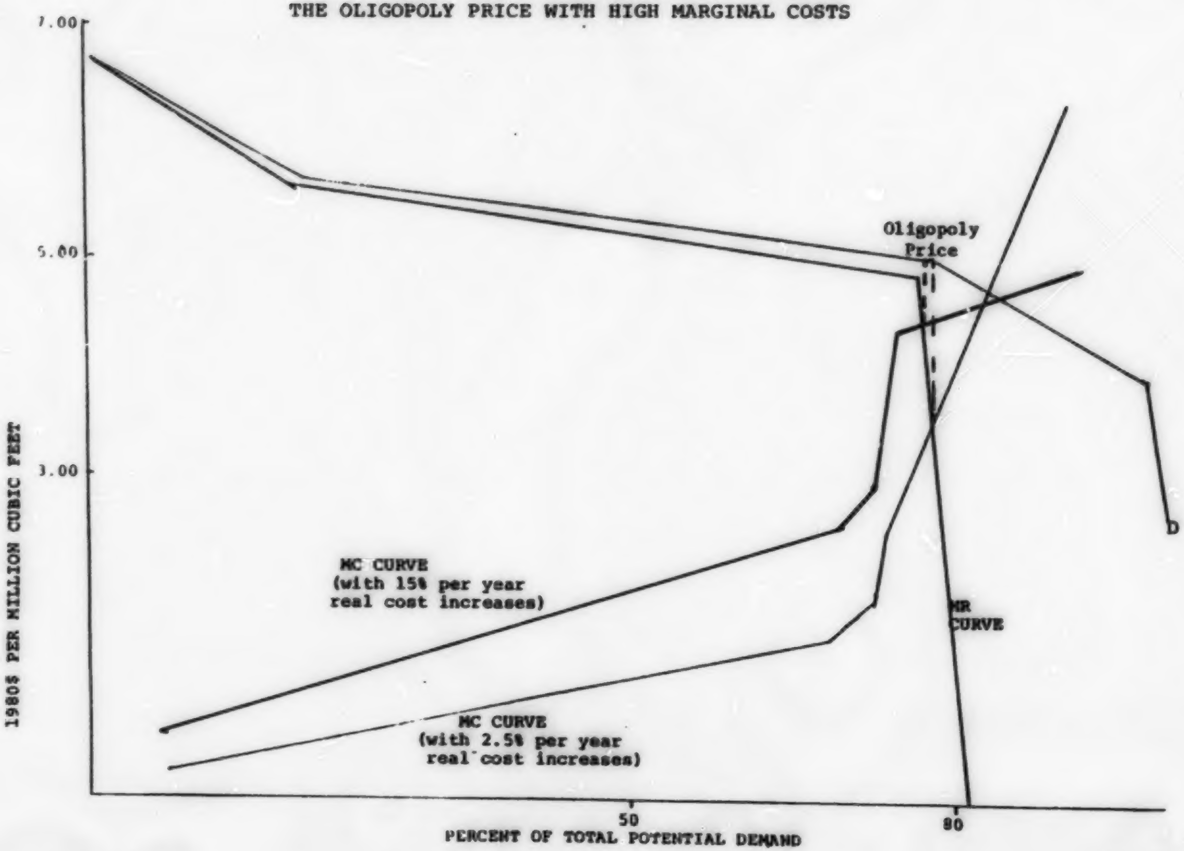


Source: Tables A.1 and A.2

271

FIGURE A.10

THE OLIGOPOLY PRICE WITH HIGH MARGINAL COSTS



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It should be noted that the oligopoly price would reduce supply by about 6 percentage points below the competitive market solution. Assuming a higher cost curve, the reduction in supply might be as large as 13 additional percentage points. Thus, an oligopoly assumption will lead to a market price about 10 percent higher than the competitive assumption with the quantity supplied reduced by at least 6 percentage points.

A message of equal significance to be drawn from the analysis is that the oligopoly price will be sensitive to the residential, not the industrial, market. That is, over one-quarter of all the demand occurs as interstate residential demand at $5.08 and this appears to be the critical point on the demand curve.[4] The high sulfur residual oil market is not important to the oligopolist and he foregoes most of it.

The residential demand is the most important point on the demand curve and it is a point about which there are significant differences of opinion in regard to the true elasticity of demand. In the next section, we examine an alternative assumption about residential and commercial demand. This leads us to redraw the demand curve and examine the implications of a differently shaped demand curve for the market price set by oligopolistic behavior.

F. Alternative Assumptions About Residential/Commercial Sector Demand

In calculating the alternative fuel prices for industrial and electric utility demand, DOE included fuel conversion costs (i.e., the cost of switching to gas) where such costs are assumed to exist. Moreover, at the margin, dual fuel burning capacity was assumed to exist so that there are no conversion costs. DOE did not factor conversion costs into the alternative fuel price for the residential and commercial markets since these markets were not near the theoretical margin.

However, if residential and commercial demand is going to play a critical role in setting the oligopoly price, then the rational oligopolist would definitely want to take conversion costs in those sectors into account. That is, if residential and commercial consumers must incur additional costs to convert from natural gas to some alternative, this raises the effective cost of the alternative fuel. Oligopolists can capture some of this in their price without fear of losing that demand. In fact, there is very little dual fuel burning capacity in the residential and commercial sectors and very significant conversion costs in those sectors.

Let us take a simple example. First, we assume conversion costs of $1400 to be amortized (simple payback) over seven years.[5] Spread over an average annual consumption of 100 million BTUs per year, this would add $2.00/mcf to the effective alternative fuel price.[6] The commercial sector would have larger volumes of gas consumed but higher conversion costs, so that $2.00/mcf is a reasonable estimate for this sector as well. Finally, we assume that all residential and commercial users must incur these costs.

The resulting demand curve (see Figure A.11) becomes much smoother than the earlier curve and less elastic, i.e., steeper. A straight line marginal revenue curve now cuts the marginal cost curve at a lower quantity leading to a higher price. The oligopolist would optimize profits in the $5.40/MCF range and supply would be reduced by an additional 10 percentage points.

This modification of the demand curve leads to rather robust results. If we assume only $1.00/mcf in conversion costs, the oligopoly price would be between $5.30 and $5.40.

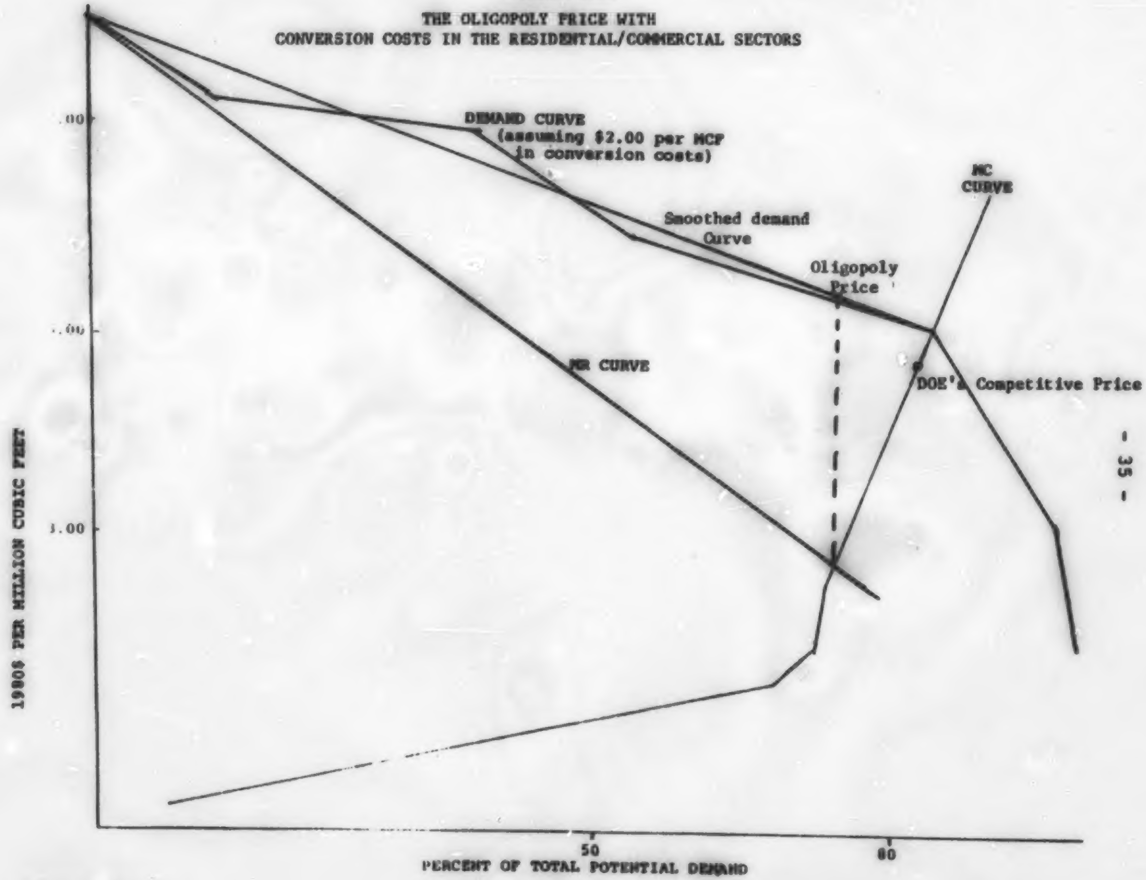
Obviously, different assumptions about conversion costs and/or more detailed analysis of the capacity to switch fuels in the short and long term might alter these outcomes. However, some conversion costs must be factored in and a price range of $5.30-$5.40 for the oligopoly wellhead price seems to be a good estimate. This is a price that is about 15 percent higher than DOE's assumed market clearing price and about twice as high as the industry estimates. The quantity supplied would be about 15 percent below the competitive market solution which means that 30 percent of the total demand is foregone.

G. Summary and Conclusion

In this Appendix, the possible impact of oligopolistic, as opposed to competitive, behavior on the market price of natural gas has been examined.

FIGURE A.11

THE OLIGOPOLY PRICE WITH
CONVERSION COSTS IN THE RESIDENTIAL/COMMERCIAL SECTORS



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276

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It has been shown that the configuration of the supply and demand curves is such that oligopolists could administer prices with considerable security. In contrast to the market clearing price estimated by DOE of $4.69/mcf, an oligopoly situation could result in a market price in excess of $5.40, although a range of $5.30 to $5.40 may be more likely.

The estimation of the supply curve also reveals that the rate of return on natural gas production is extremely high -- between 100 and 300 percent. These rates of profit can be presumed to reflect an absence of competitive conditions on the supply side of the market.

From a more general perspective, the shape of the demand and supply curves that have been calculated should caution against simplistic analyses of the gas market even where competition is assumed. Both curves are quite steep (i.e., inelastic) at the point of equilibrium, meaning that they are insensitive to price changes.

FOOTNOTES

[1] DOE, Two Market Analysis of Natural Gas Decontrol (Washington, DC: Government Printing Office, November 1981).

[2] A brief description of the basic structural characteristics of the natural gas market that lead us to this conclusion can be found in Dr. Mark Cooper, Director of Research, Consumer Energy Council of America, "The Implementation of Title I of the Natural Gas Policy Act of 1978," testimony before the Committee on Energy and Natural Resources, United States Senate (November 5, 1981).

[3] Robert S. Pindyck, The Structure of World Energy Demand (Cambridge, MIT Press, 1979).

[4] The slope of the demand curve can be described as follows:

There is a section of the curve (about 20 percent of the total demand) that is relatively inelastic (steep) at high wellhead prices (between \$5.70 and \$6.70/MCF in 1980 \$). This demand occurs in the intrastate market. This block combines high priced alternative fuels with low transmission costs. That is, the wellhead gas price could be quite high because the alternative is expensive and transmission and distribution costs are low.

There is then a second section of the curve (about 60 percent of total demand) that appears quite elastic (between \$5.00 and \$5.60/MCF in 1980 \$). Most of this block (43 percentage points of the 60 percentage points) is made up of the interstate residential, commercial and industrial nonboiler demand. This block combines high priced alternatives with high transmission costs.

Next, there is a block (about 18 percent of total demand) which is relatively inelastic at prices between \$3.90 and \$5.00/MCF in 1980 \$. This is primarily industrial demand -- plus some commercial demand. This includes the category of high sulfur residual.

Finally, there is a small block of demand (about 3 percent) that is very inelastic at low prices. This block is intrastate boiler demand.

In DOE's analysis, the industrial demand between \$39.0 and \$5.00 is the critical marginal demand. In the oligopoly situation, the residential demand above \$5.00 appears to be the critical marginal demand.

[5] See, Consumer Energy Council of America, "An Analysis of the Economics of Fuel Switching Versus Conservation for the Residential Heating Oil Consumer" (Washington, DC, October 5, 1980) for a discussion of conservation costs.

Representative RICHMOND. Thank you, Mr. Cooper. Mr. Taliaferro.

STATEMENT OF HENRY B. TALIAFERRO, JR., EXECUTIVE VICE PRESIDENT, THE GHK COMPANIES, OKLAHOMA CITY, OKLA.

Mr. TALIAFERRO. Representative Richmond, thank you.

Mr. name is Henry Taliaferro. I am executive vice president of the GHK Companies located in Oklahoma City. I speak on behalf of my companies and also a group called the Independent Gas Producers Committee made up of 22 other companies also involved in the search for new gas supplies at whatever depth.

May I refer to your opening statement in which you described the mechanism of the Natural Gas Policy Act as a delicate balance or a delicate compromise, and it was indeed that.

We participated actively in the debates in 1977 and 1978, and in fact I believe we were the first industry voice before the Congress in 1971 to suggest that pricing policy should recognize one distinction among gas—old and new. Mr. Lawrence has referred to that distinction. Let me elaborate only to this degree. Old gas is for the most part that gas which was found cheaply, and for the most part found at no incremental cost in the course of the search for oil by oil companies.

Now we have a rapidly depleting supply of that old inexpensive gas. The new gas, which, Congressman, is in enormous abundance domestically as well as around the world, is the gas found at such horizons as no oil is to be encountered. At least that is true domestically in the United States.

Representative RICHMOND. Are you saying new gas is in great abundance?

Mr. TALIAFERRO. It is in very great abundance.

Representative RICHMOND. But it's deep, I assume.

Mr. TALIAFERRO. It is not only deep, but it is in such formations that it is found alone and not in association with oil for the most part. And therefore the economics of the gas that you are seeking has to support your exploratory and development effort.

Representative RICHMOND. Is it deep also? Or could it be shallow?

Mr. TALIAFERRO. It can be shallow in our terms. Shallow in our terms is below 10,000 feet. Below 10,000 feet very, very little crude oil is to be found, and it is mostly methane.

Representative RICHMOND. We're talking about gas?

Mr. TALIAFERRO. We're talking about gas, natural gas. And the vast new supplies that can fuel this economy with a conventional hydrocarbon, highly desirable source of energy are sufficient to carry this economy well into the 21st century. Now we said that to the Congress, as did the relatively few companies in the gas production business, beginning in 1971, and finally when the compromise in 1978 that is represented in the NGPA was worked out among you, as the manager's report will reflect when you read it, they said, all right, we've got a few gas producers who say there is an awful lot of gas. Let's arrange a scheme whereby they can secure incentive pricing to go after these high-cost new supplies, based on the premise that there could be no more important national objective than to prove and reliably be able to deliver the abundant supplies we said, and some others said, were there.

Now in only the first 2 years of this effort we are being rapidly proved right. The genius of the NGPA system, and it is not by any means an unflawed law, but at some risk of your taking some institutional umbrage, a little bit like the blind sow, the Congress found an acre with the NGPA, and they said let's take this old flowing gas found at no incremental cost under a perfectly satisfactory set of economics, and let's balance the price in the average stream in the pipeline with the higher incentive price necessary to elicit these vast new supplies, and that way we'll see if these characters are right about how much new supply is there without visiting upon the consumer the full cost of that exploration effort. And that's what has happened.

Now we are producers of gas, and we are getting very high and above any competitive market price for the gas that is found in deep horizons, to finance that exploratory effort. We are proving up very rapidly—and we've had only 2 years of activity under this law, and some of our wells take 2 years even to drill—that we were right geologically. The gas is there. It will supply a reliable domestic energy source to this country for decades to come.

Representative Richmond. Where is all this gas located?

Mr. Taliaferro. It is located in a number of frontier-scale provinces. The one in which we operate happens to be the Anadarko basin of Oklahoma and Texas. The Appalachian basin is the newest one in which efforts are being undertaken now. The Michigan basin just behind it. The Rocky Mountain overthrust basins and the deep trends of the gulf, all of those are areas in which we already know frontier-scale, not marginal supply, frontier base-load supplies of natural gas remain to be developed and completed and delivered into this economy by the use of the conventional transportation system.

Now that is an enormously important economic objective. We are able now to see in every one of those gas provinces that I have mentioned exploration and development activity running at unheard of levels in our history. We are actually operating clear out at the gradually increasing level of our logistical capacity, primarily our capacity to train people.

We do not need more price incentive. We are already attracting venture capital to this search as fast as it can be used, and we are providing new gas reserves as fast as we drill the wells.

What we are saying is, while we, too, would theoretically favor deregulation, in this instance the price averaging mechanism of the Natural Gas Policy Act is making this exploratory proving project possible without charging the consumer the full cost of the risk of that effort.

So we say it ain't broke, so don't fix it, with respect to the Natural Gas Policy Act. Let it run its course.

Representative Richmond. Let it run its course and go on to deregulation by 1985?

Mr. Taliaferro. Yes, sir, if we could tamper with it, we would say deregulate new gas now, all new gas. But I don't think it's realistic to say tamper with it.

Representative Richmond. I assume new gas is very frequently deeper gas.

Mr. TALIAFERRO. Only the very deep gas is deregulated, as you know, and what we would say is, what we would suggest, if we could play God with the act, Congressman, deregulate all gas from wells completed after January 1, 1983, let's say.

Representative RICHMOND. How come deep wells are only three percent of total production?

Mr. TALIAFERRO. Well, because it's such a new effort. It takes from 8 months to 2 years to drill one of these wells. Commonly, it takes another 6 months to 1 year to complete pipeline connection, contract negotiation, and the flow of production statistics into the official stream. As a matter of fact, I will give you an example of deep activity. In our basin alone in 1977 there were 179 wells targeted below 15,000 feet. In January 15 of this year there were 823.

Representative RICHMOND. So your prognosis is that there is going to be an awfully lot more production from deep wells in the next few years, is that correct?

Mr. TALIAFERRO. Not just from deep wells. This is not really a dispute between the deep gas and the shallow gas. It's new gas.

Representative RICHMOND. Except that the deep gas is effectively decontrolled now.

Mr. TALIAFERRO. Yes, sir, but that's providing a range of incentives for the exporation and development of new gas reserves at whatever depth.

Let me give you an example. We recently completed our No. 1 Harrel well in Washita County, Okla., at 26,400 feet. Dry as a bone. It took 2 years to drill that well. A year ago we passed through a shallow formation and had a good gas show. We went on down looking for the deeper, more prolific supplies and we didn't find them. In the one year since we passed through that shallow zone 23 wells in that shallow zone have been drilled and completed and are now on stream.

So the NGPA doesn't provide a carrot only for deep gas, but for new gas. And we say leave it alone.

Representative RICHMOND. What prices are some of these deep wells bringing?

Mr. TALIAFERRO. In our province, on the order of $8.10 in the 107 gas below 15,000 feet.

Representative RICHMOND. There are pipelines that are willing to pay that higher price?

Mr. TALIAFERRO. Yes, sir; as a matter of fact, in inverse relationship to the amount of deep gas cushion they own, as Mr. Lawrence pointed out. And let me tell you why.

Representative RICHMOND. That price is considerably higher than No. 2 fuel. Right?

Mr. TALIAFERRO. Yes, sir; no question about that. And there is no question that that price is going to moderate, Congressman.

Representative RICHMOND. Why?

Mr. TALIAFERRO. Because the ultimate pricing function that we are talking about is not a function, after this transition period, of the NGPA. It's not any longer a pricing function of a short commodity. It is going to be pricing at the burner tip a commodity in abundant supply. And therefore now to speculate at what market level the price for natural gas, when these new reserves are proved up, as they will very shortly be, is idle, in my judgment. It may well not be any. It's going to have to compete.

Representative RICHMOND. Tell me a little about profit margins.

Mr. TALIAFERRO. The profit margins and the risks are substantial.

Representative RICHMOND. Take deep wells first, where the gas is selling at $8 and some odd cents. How long does it take to amortize an investment at that price?

Mr. TALIAFERRO. A well 24,000 feet typically in our basin will cost $23 to $25 million to drill and complete. We may drill a number of those and they will be dry. The shallower wells that we are drilling and completing by what we learn drilling the deep ones, even those that are unsuccessful, are costing now about $3 million a piece, and, of course, that gas sells for less. But the sum total is giving us about a 25-percent return on total investment.

Representative RICHMOND. So you and your 26 associates are able to get a 25-percent return under present law?

Mr. TALIAFERRO. That's right; in that neighborhood.

Representative RICHMOND. On deep wells and shallow wells?

Mr. TALIAFERRO. The whole program. That's right. And that is attracting venture capital into our business, and it is attracting it at a maximum rate which it can be utilized.

Representative RICHMOND. When you say 25-percent return, how many years are you talking about?

Mr. TALIAFERRO. Well, they are 30-year reserve life. The more prolific new reserves we are now finding, typically 30-year reserve life.

Representative RICHMOND. So even amortizing the interest and everything else you still get a 25-percent net return on it per year?

Mr. TALIAFERRO. Because you see, we're all very highly leveraged. We're borrowing against established reserves at today's high interest rates and putting all of it back in the ground.

Representative RICHMOND. Give us one example of a deep well. Take an example. You dig a deep well in your basin. It costs you $25 million.

Mr. TALIAFERRO. Sometimes as much as $25 million. We have two now that are going to cost us more than that.

Representative RICHMOND. A lot of that is borrowed at roughly 20 percent, I assume.

Mr. TALIAFERRO. That's true.

Representative RICHMOND. When you say you get a 25-percent return, that's——

Mr. TALIAFERRO. Discounted return. Over the life of the reservoir and given our capital costs.

Representative RICHMOND. You're still not getting to me. After you've paid your interest you've got a small amount of capital invested in the thing. What's the ratio usually on wells?

Mr. TALIAFERRO. I'm sorry, sir.

Representative RICHMOND. What's the ratio usually on wells? How much capital do you have to put in against borrowed money? How much of other people's money do you use against your own money?

Mr. TALIAFERRO. What you do is take the proven reserves and borrow at the bank at a discount both on the reserves themselves and the dollars. So typically we are able to borrow 50 percent on proved reserves.

Representative **Richmond**. Amortizing your interest and everything else you still get a 25-percent return.

Mr. **Taliaferro**. Yes.

Representative **Richmond**. Which makes it very attractive to any investor.

Mr. **Taliaferro**. That's true. And what I'm saying is that the result of this effort in establishing these new reserves is going——

Representative **Richmond**. What would deregulation do to you?

Mr. **Taliaferro**. Deregulation will reduce that incentive remarkably.

Representative **Richmond**. In other words, you and Mr. Cooper agree with each other?

Mr. **Taliaferro**. Mr. Cooper and I may agree with one another on a few particulars, but not in general, no.

Representative **Richmond**. You say that deregulation would reduce the incentive?

Mr. **Taliaferro**. Yes, indeed. It would spike the average price of natural gas and reduce our markets, and we cannot store it and we cannot eat it. We have to sell it because we are leveraged. What we are saying now is, if you leave the cushion in place, as the old gas reserves are depleted and that portion of the price averaging that they represent is reduced, the new gas reserves are coming on in greater volume, with the presently increasing price—incidentally, that price is already moderating—so you're going to get a more orderly pricing trajectory under the NGPA than you would get if you now deregulate the old flowing gas. If you do, the average price spikes, the markets are diminished, the gas can't be sold, the investors and the lenders will not let as much, and this historically high level of activity that we are now undertaking will be diminished, and the loser there is the Nation, because it will be at least delayed in its ability to establish the reliability of these new reserves.

Already we have contributed materially, as a matter of fact, to the amount of foreign oil that we have to import.

With respect to the abundance, Congressman, what I am saying about it is it is going to be adequate to back out all liquids from stationary power usage.

Representative **Richmond**. I'm just wondering whether this abundance is $8.50 oil.

Mr. **Taliaferro**. No, sir. It will not be.

Representative **Richmond**. Tell me what price this abundance is going to cost the American consumer.

Mr. **Taliaferro**. I can't, and I don't really approve of efforts to try that are based on a crude oil price or a liquid product price now, because what we are going to have is an abundant energy commodity domestically produced in this country that will be sold at the burner tip at an economic price, and that may not have reference to a foreign barrel, or an oil product barrel.

But I will say this, that the oil companies that are here now telling you to immediately deregulate the old flowing gas, most of which they own, are concerned about what gas prices are going to do to the burner tip competition, and they would like to see those prices up, and I say those prices are going to come down as the abundance of the supply is proved.

Give us the interim period to do it.

Representative RICHMOND. Once you have deregulation the marketplace would come into effect, and if you did have abundant gas it would compete very favorably with oil. Is that what you are saying?

Mr. TALIAFERRO. Yes, sir. And if you leave this period of transition alone I suggest that will happen. If you deregulate that old flowing gas right now, the price spikes, the incentive for the new gas establishing program, if you will, is diminished, materially diminished.

Representative RICHMOND. Now what do we do about the poor folks that suddenly find that they have to pay twice as much to heat their houses? Folks in my district, for example. I represent the third poorest district in the State.

Mr. TALIAFERRO. I understand, sir. And my suggestion is that the things that can be done of greatest benefit to your gas consumers is to leave this law in place, let these new reserves and their abundance be established and be available reliably in that marketplace and that is what's going to moderate their fuel bill.

Representative RICHMOND. In other words, you feel over the next few years there will be so much new gas discovery that then the free marketplace could come into effect in 1985 and not necessarily bring the price of gas up that high?

Mr. TALIAFERRO. That's exactly right. The market will not simply be, incidentally, the gas market, as most of it now is, light commercial and residential, but it will be in such supply and such reliable supply that the utility executive who underwent curtailment and is scared to death of natural gas supply reliability will be able to use it also for industrial and generational purposes and again will moderate the price to the residential homeowner.

[The prepared statement of Mr. Taliaferro follows:]

PREPARED STATEMENT OF HENRY B. TALIAFERRO, JR.

Introduction

Mr Chairman, my name is Henry B. Taliaferro, Jr. I am Executive Vice President of The GHK Companies, headquartered in Oklahoma City, Oklahoma. GHK is an independent natural gas producer. Today I am speaking on behalf of GHK and also on behalf of the Independent Gas Producers Committee (IGPC).[1]

The Independent Gas Producers Committee is composed of 23 independent natural gas producers, including GHK. The member companies are headquartered in Louisiana, Texas, Kansas, Minnesota and Oklahoma. My company is known primarily as a pioneer explorationist and producer of deep gas. In fact, our production is divided about half and half, shallow and deep. The other IGPC members are all actively engaged in the search for new gas. Not all IGPC members are involved in the deep gas search.

I thank you for this opportunity to explain our views of the economic impact of natural gas decontrol. Obviously, the subject is of fundamental interest to the future of our companies and our industry. Our extensive research over many years into the economic effect of natural gas pricing policy has led us to believe that it is of fundamental importance to the economy of the nation to a degree not generally understood. Therefore, we are particularly pleased that the Joint Economic Committee is addressing this subject.

Mr Chairman, everyone in this room would agree on hopes for our economy. We all want a more productive and growing economy with jobs for everyone, stable costs of living, with reasonable and predictable prices in expanding markets, and low interest rates.

There is no dispute over the objectives. It is proving terribly difficult to achieve them all at once--and to sustain them. That difficulty has aggravated the debate over public economic policy which has enlivened our national history since we became an industrial nation. Not since the decades of debate in the last half of the 19th and early 20th centuries over tariff policy has the Congress been embroiled in a longer and more bitter controversy than over natural gas pricing and its role in meeting those objectives. That debate began with the Philips case in 1954 which resulted in wellhead price regulation of natural gas and continued through the bitter and complex legislative battle between 1976 and 1978 which resulted in the compromise engrafted into the Natural Gas Policy Act. The GHK Companies and the IGPC were active in that legislative effort. We only recently reorganized for the current renewal of the debate, which our companies are profoundly disappointed to see arise.

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[1] A full list of IGPC Member Companies is provided at Appendix A

National Economic Costs of Old Gas Decontrol

It is impossible for us to conceive of any subject more out of place on this session's Congressional agenda than proposed legislation which would, with a single stroke, undermine each and every one of the nation's more important economic goals. Yet the deregulation of old flowing natural gas would do just that. It would simultaneously drive up inflation, drive up interest rates, drive thousands of people from their jobs, lower the productivity of our industries and depress the rate of growth in our economy.

Let me emphasize that these concerns are not those of our companies alone. One of the strongest advocates of old gas decontrol during the past year has been the Department of Energy (DOE). Last November, the Department completed an analysis of the NGPA and of alternatives for phased and immediate decontrol of old flowing gas.[2] That DOE study documented each of the serious adverse effects I have just mentioned, which, even under a phased approach, would be inflicted upon our economy during the critical next three years.

Recognizing these devastating adverse economic effects, our companies' message to this committee and to the Congress is this: if you want a healthy, growing economy fueled well into the next century at stable prices by a reliable abundance of clean burning natural gas, now being rapidly proved and developed by natural gas producers, resulting in greater energy self-sufficiency for the nation and less dependence on foreign oil, do not deregulate the price of old flowing gas.

In principle, we favor the elimination of gas price controls. Indeed, our companies have been among the most active in seeking that result. Specifically, The GHK Companies have been actively addressing the Congress (and the Federal Power Commission -- Federal Energy Regulatory Commission) on that subject since 1971. But, during the intensive two-year debate which resulted in the compromise of the NGPA, we realized it was both unrealistic and counterproductive for the nation to ask the Congress to end nearly 40 years of regulation overnight. The NGPA provides an orderly transition to completely free markets through a phase-out of price controls on new gas by 1985, with a phase-out of controls on all gas as reserves of old flowing gas are depleted. As we will demonstrate, that compromise Act incorporated an accommodation among conflicting interests which is working quite well. Now the economic risks of tampering with those wellhead pricing provisions are unacceptable and overwhelm any speculative benefit to be gained by any portion of the industry.

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[2] U. S. Department of Energy, A Study of Alternatives to the Natural Gas Policy Act of 1978, November 1981, DOE PE-0031

We also believe it would be foolhardy to consume any more legislative time or attention on the subject of natural gas decontrol in the light of the urgent national economic objectives and priorities we all share.

Distinction Between Old and New Gas

In truth, there are only two meaningful categories of natural gas: old gas, or that which has already been found, and new gas, or that which remains to be found. The principal difference between the two is economic.

Nearly all of the gas that has already been found was discovered at shallow depths, with most found at no incremental cost as a by-product of oil exploration. This gas was profitable to produce at the very low prices that prevailed in the 1960's and early 1970's. It is still profitable at today's higher prices and will remain so through automatic adjustment for inflation provided by the NGPA.

Of the natural gas that remains to be found, from 75% to 90% will be produced where no oil is to be found: from deeper horizons (beneath 10,000 feet); from tight sands formations; and, from unconventional sources such as the Devonian shales of Appalachia.3/ While shallow sediments have been extensively explored for both oil and gas, until recently

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3/ GHK resource base estimates are explained in the chart and legend provided at Appendix B.

low prices have prohibited development of the more costly, but also much more abundant sources of natural gas. Before the NGPA was passed, only about 1% of all the wells drilled in the history of the oil and gas industry were targeted toward deep and other high cost formations although they constitute by far the largest share of America's future gas resource base.

The well-being of the natural gas industry, of consumers and most importantly, of our country depends upon preserving and enhancing incentives to develop new gas supplies where most of them are to be found, not upon sharply increasing prices for supplies discovered long ago.

NGPA Incentive Pricing

It is this distinction between new and old gas that lies at the heart of compromise reached in the Natural Gas Policy Act of 1978 (NGPA). In enacting the NGPA, the Congress put highest priority not on increasing the profits to be made for gas that was already flowing to consumers but instead on increasing the incentives for producers to explore and develop the supplies of domestic gas consumers will need for the future.

Through incentive pricing, producers are able to develop this plentiful new resource base without charging the full cost to the consumer. Instead, the NGPA allows this new exploration to be financed, in part, by the savings or dividend created by controls on old gas.

Under incentive pricing, the price of higher cost new gas is averaged with the price of lower cost old gas so that consumers pay no more than is necessary to help finance the discovery of new supplies. Consumers benefit from price averaging in the near term because lower cost old gas cushions the rate of increase in fuel bills. In the intermediate and longer term, consumers also benefit from the price moderation permitted by rapidly expanding new gas supplies.

This system of incentive pricing for new gas development is not damaging financially to the companies that own large amounts of old gas for two reasons: first, old gas is profitable today and will remain so under the NGPA; and, second, companies that own it have full opportunity to share in the higher NGPA incentives for discovery of new gas.

We estimate that over 70% of America's potential natural gas resource base today is either incentive priced or could be incentive priced under proposed Federal Energy Regulatory Commission (FERC) rulemakings. I have appended at the conclusion of my remarks a chart and legend explaining this estimate.[4] It is derived from estimates prepared by the Potential Gas Committee, headquartered at the Colorado School of Mines, the most respected organization in the field of resource base estimation.

Incentive Pricing Works

Proof that incentive pricing works can be seen in the results in just one producing province -- the Deep Anadarko Basin of Western Oklahoma and the Texas Panhandle:

- Currently, investment in exploration of the Deep Anadarko Basin is running at an annual rate of $3 billion. This is triple the 1977 investment in exploration for deep gas in the entire United States.
- Since deregulation in November 1979, deep drilling activity in the Anadarko has more than quadrupled from 194 active locations to 821 as of January 15, 1982.
- The number of deep wells completed in the Anadarko Basin has more than doubled from the first half of 1980 to the first half of 1981.
- Based on the number of active locations as of October 1981, the respected Resource Analysis and Management Group of Oklahoma City forecasts almost 2.8 trillion cubic feet in new reserve additions from Deep Anadarko exploratory activity now underway.
- If market conditions permit presently planned investment levels to continue, we project that the industry will discovery 15 trillion cubic feet of new reserves by 1985 and 30 trillion cubic feet of new reserves by 1990 in the Deep Anadarko Basin alone.

The NGPA incentive pricing system is not just stimulating a rapid acceleration in exploration of deep sediments. It is providing a range of incentives to stimulate record shallow drilling activity as well. In effect, the incentive price for deep gas acts as a carrot to spur discovery and development of shallow and intermediate gas. For example, GHK's #1-2 Harrel well in Washita County was dry in the Hunton formation at a total depth of 26,400 feet. Over a year ago we passed through the Atoka formation at 14,400 feet with good shows of gas. As a result, in the past year, 20 Atoka development wells have been completed and an entire new field brought into production.

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[4] See Appendix B.

More importantly, after December 1984, producers of shallow gas can expect, under the NGPA, to receive the benefit from price averaging now available to producers of deep gas.[5] The majority of the income produced from wells now being drilled will be earned, not in the next year or two, but rather over the full life of the wells in the next decades. Thus, any well drilled between now and 1984, whether shallow or deep, shows a higher rate of return over the life of the reserves if old gas prices are not decontrolled. For these reasons, more shallow wells are being drilled today than ever before in the history of the natural gas industry, and more producers across the country are expressing support for our position on the decontrol issue.[6]

Impact of Old Gas Decontrol on Domestic Energy Supply

If old gas prices were raised, the incentive for investment in new exploration would plummet. This loss will be immediate for gas from deep sediments, tight sands, and other sources, now incentive priced, which constitute the majority of America's future gas supplies.[7] The loss in incentives to develop marginal supplies of gas located in shallow sediments could theoretically be postponed until the period 1985 and beyond. However, it is probable that exploration incentives for shallow gas will decline before 1985. Even at today's prices there is substantial surplus deliverability in virtually all producing provinces. If prices escalate rapidly, demand will contract. If all gas were priced equally, shallow wells, with relatively low flow rates and short reserve lives, would be the least desirable source of gas for pipelines which place a premium on high flow rates and long-lasting supplies.

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[5] DOE in A Study of Alternatives to the Natural Gas Policy Act (Op. Cit.) projects a 1985 new gas price of $6.76/mcf under the NGPA compared with $4.65 under total decontrol.

[6] Appendix C contains communications from Kansas and Louisiana producers urging that action on decontrol legislation be put off in view of the need to maintain priority on improving the health of the national economy.

[7] See Appendix A. Natural gas supplies now incentive priced total an estimated 52% of the nation's potential recoverable gas reserves.

The reality of a system of partial regulation which yields stronger production incentives than a totally unregulated market is not theory; it is fact. The effects I have described are confirmed by the Energy Department in its November, 1981 study.8/ The Department's analysis demonstrates that between 1985 and 1995 gas production will be lower and oil imports correspondingly higher if price controls on old gas are removed. In 1990, for example, the DOE projects gas production 500 billion cubic feet lower and oil imports nearly 200,000 barrels per day higher if old gas prices are raised.

The Congress has repeatedly affirmed the high priority it places on maximizing domestic energy production and thereby reducing, as swiftly as possible, dependence on foreign oil. Old gas decontrol conflicts directly with that urgent national priority.

Windfall Profit Tax: Impact on Gas Production

Mr. Chairman, as you know, the issue of old gas decontrol cannot be viewed in isolation. It is universally conceded that a decontrol bill could not pass this year without a steep new tax on gas. A combined decontrol/tax bill would compound the severe costs to our economy of decontrol alone and reduce, not raise, treasury receipts.

A tax designed to reduce the budget deficit would take money out of the economy, further reducing national economic output, jobs and productivity. It would add to consumer costs, encouraging less use of gas. Smaller markets

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8/ U. S. Department of Enrgy, Op. Cit., November 1981. Table 17 on page 54 projects the impacts of alternative policies on oil import levels. Table 1 (page 9) and Table 4 (page 22) quantify the impacts of alternative policies on domestic prices and production. Note that the costs of full decontrol are magnified if low world oil prices or a slack gas market are assumed, the most probable scenarios in view of recent trends in both domestic and world energy markets.

for gas would further dampen incentives for new exploration. The portion of the tax which could not be passed through to consumers would be absorbed indirectly by new gas producers, leaving less capital in the hands of explorationists to finance new drilling. Companies not actively exploring for new gas would surely gain from old gas decontrol, even with a tax. Active exploration companies will just as surely lose, and the losses would be greatly magnified if a tax were enacted.

The Natural Gas Surplus

Mr. Chairman, it is essential that the Congress understand the reality of the natural gas market today. Natural gas is in surplus. Virtually all of the econometric analyses prepared to date on the impact of decontrol ignore two fundamental facts. First, our economy is in a recession which automatically diminishes demand. Second, even before the recession, pipeline hook-ups had slowed, takes were down and actual production had fallen well below available deliverability[9]

We are not operating in a market where supplies are short or capital scarce so that a massive new infusion of capital would result in substantial new production. We are operating in a market that is demand constrained, in part by unnecessary federal restrictions on industrial use.

Future Markets for Gas

There are vast potential markets for domestically produced natural gas. American industry today consumes roughly five million barrels of oil per day, all or nearly all of which could be displaced by gas. The prospect of penetrating this enormous market provides a powerful incentive for gas explorationists rapidly to develop plentiful new supplies. Demand constraints, such as incremental pricing and the Fuel Use Act, are obstacles which must be removed. They are already being eased as Congress gains confidence in the productive capacity of the gas industry. But a rapid jolt in the average price paid by users, coupled with a sharp decline in the incentive price received by new gas producers, would set our industry and our country back a decade or more in the drive toward energy self-sufficiency.

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[9] In their 1980 Annual Reports, companies such as Tenneco, Philips, Shell and Belco all pointed to declining production as a result of reduced market demand.

Windfall Profit Tax: Impact on the Budget Deficit

Nor would the federal government gain any real increase in revenue from a gas windfall profit tax. Earlier this month, the Congressional Budget Office (CBO) issued a report which demonstrates, in part, why a decontrol/windfall tax bill could not produce a net revenue gain.[10] First, to generate any sizeable growth in revenues, the price of natural gas would have to jump immediately to the approximate oil equivalent price. No one is proposing such a sudden price shock in view of our nation's current economic difficulties. Second, a significant portion of the tax -- that paid by industrial users -- would be deducted by them as a business expense. Third, unless the Federal Reserve Board is willing to permit very high levels of inflation without tightening up on monetary policy -- an untenable assumption given recent experience -- overall GNP would be reduced. Corporate and individual income taxes would fall. As CBO states, "Taking all these factors into account, the net revenue gain from decontrol and a windfall profit tax on natural gas could be as low as $1 billion in 1983 and $6 billion in 1984".

In fact, even these figures are too high. First, they do not reflect the loss of incomes and investment among new gas exploration companies which would immediately accompany an increase in the price of old gas. Second, they fail to reflect the contraction in markets caused by higher consumer prices. Old gas producers would have higher incomes. But, the revenue gain from these companies would be offset by revenue losses from exploration companies whose profits decline. The gas industry overall would be producing less natural gas and therefore contributing less to the federal treasury over time.

The Differences Between Oil and Gas

In assessing the decontrol issue, it is essential to draw the distinction between a sound policy for natural gas and a sound policy for oil. Many observers have tended to view the two commodities as identical and therefore to conclude that if decontrol with a windfall tax worked for oil, surely it will work for gas.

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[10] Congressional Budget Office, Reducing the Federal Deficit: Strategies and Options, February 1982, Pages 197-199.

Superficially, there is a similarity between oil and gas. Both are forms of energy. Both in the past have been in short supply. Both have been subject to price controls. It is at this point that the similarity stops.

Natural gas competes with oil. It competes with residual fuel oil and distillate in the industrial market. It competes with distillate fuel oil in the residential and commercial market. The point it this: price controls on old flowing natural gas are not subsidizing oil imports, they are subsidizing a reduction in oil imports.

Under the oil price controls structure adopted in the early 1970's, a low domestic ceiling price, in effect, encouraged added consumption and therefore higher petroleum imports. Domestic controls also tended to drive investment in new drilling abroad, where producers could take advantage of soaring world prices. As a result, domestic production declined. Decontrol with a windfall profit tax on oil, left no domestic producer worse off than he was before the controls were removed. Consumers were not faced with a pass-through of the windfall profit tax on oil because, upon decontrol, the OPEC price became the domestic ceiling price. And, the federal government did not retain the proceeds of the oil windfall tax, but rather rebated it to help pay for conservation, to spur development of alternative fuels, and to ease the burden of higher energy prices on low-income Americans.

Price controls on old, flowing gas are subsidizing a reduction in oil imports, first, by stimulating new exploration, and, second, by encouraging users to shift from higher cost petroleum to lower cost gas. Companies actively exploring for new natural gas would be substantially worse off under a combined decontrol/windfall tax plan, than they are under current law. Consumers would be forced to absorb at least part of the tax, because residential users especially cannot readily convert to the only alternative energy source -- fuel oil. And, as CBO points out[11], there is no competitive international source of natural gas to act as a ceiling on fully deregulated domestic gas prices. Lastly, if the federal government attempted to offset the impact of soaring heating bills on low-income Americans, the result would be a multi-billion dollar loss in federal revenues.

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[11] Congressional Budget Office, Op. Cit., Pages 198-199.

1985 Price Spike

Concerns have been raised in the Congress and elsewhere about the potential for a significant price spike in 1985, when remaining categories of new gas are decontrolled under the NGPA. Let me assure you the chances of this happening are remote and rapidly fading. It is true that the Congress assumed a fifteen dollar 1985 world oil price when the NGPA was passed. Despite this miscalculation, there is mounting evidence that the 1985 transition will be smooth -- with potential for a smaller increase in the average price of gas between 1984 and 1985 than the rate of increase that has already taken place under the NGPA. Since 1979, the average wellhead price for natural gas has been rising at an approximate rate of 30% per year.[12] Faster-than-expected increases are the product of three principal factors: a rapid increase in higher-priced new gas supplies; a rapid depletion of old gas reserves; and the movement of substantial volumes of old, flowing gas to the maximum permissible ceiling price.[13] Roughly half of the gas supplies discovered before 1977 is now selling at prices approaching $2 per mcf.[14]

The January 1982 *Natural Gas Monthly*, published by Merrill Lynch provides an excellent analysis of these trends:

> "The gas industry, as well as politicians are concerned that a substantial price spike will occur in 1985 when gas is decontrolled under the NGPA. We disagree. At the end of 1984, based on an annual inflation rate of 8%, we estimate that the average price of gas will be $3.75 - $4.00 per MMBtu. Consequently, if the average wellhead price after decontrol is in line with our estimate of $4.00 - $4.25, a dramatic price spike will not occur. In fact, our estimates indicate that if the

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[12] Securities Research Division, Merrill Lynch, Pierce, Fenner and Smith Inc., *Natural Gas Monthly*, January, 1982, Page 2. Note that Edmond R. DuPont and Associates, in a June 1981 report prepared for the American Gas Association (*Preliminary Assessment of Gas Rate Changes Under the NGPA*) arrived at an identical estimate.

[13] Securities and Research Division, *Op. Cit.*, Page 2.

[14] Edmund R. DuPont and Associates, *Preliminary Assessment of Gas Rate Changes Under the NGPA, June 26, 1981*, Page 1.

> NGPA were to remain in effect beyond January 1, 1985, the average price of gas in that year would approximate $4.00 - $4.25 per MCF, which is also our decontrolled price estimate."15/

Mr. Chairman, if Congress perceives the potential for a price spike as a legitimate source of concern, there is a quick, readily available means to ensure against any element of risk. The FERC is now considering a proposed rulemaking which would grant an incentive price for near-deep gas discovered between 10,000 feet and 15,000 feet. Incentive pricing of near-deep gas would significantly increase the volume of gas selling at, or near, the market clearing level. Average gas prices would increase somewhat, but nowhere near the rate from old gas decontrol. And, consumers would gain a concrete benefit in return for the slightly higher average price through a direct increase in available supplies.

Success of the NGPA

We do not contend that the Natural Gas Policy Act is free of any flaws. In a perfect world, we would like to see all newly discovered natural gas decontrolled immediately. We favor prompt repeal of incremental pricing and the Fuel Use Act. But, we urge the Members of this Subcommittee to consider the extraordinary progress that has been achieved since the NGPA was passed:

- o Investment in natural gas exploration and development has more than doubled from about $6 billion in 1977 to over $14 billion in 1981.
- o Each year since 1978 leasing and drilling activity have broken all prior records.
- o New reserve additions -- the amount of gas added to our nation's proven reserves -- have risen from only about half of annual use in the mid-1979's to 70% in 1979 and to almost 90% in 1980. Based on current well completion data, we predict 1981 reserve additions will exceed consumption for the first time since 1968.

15/ Securities and Reseach Division, Op. Cit., Page 3.

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- Natural gas imports have declined, even as gas has succeeded in displacing 500,000 barrels per day of foreign oil.
- And, supplies during each of the last three years have been in surplus -- a surplus which is likely to grow in 1982 from one and a half to two trillion cubic feet.16/

Visit any of the major gas producing provinces in America today, and you will find drilling activity at the highest levels in the history of our industry. New exploration is accelerating at maximum capacity and is limited only by our ability to train people.

In my home State of Oklahoma, the unemployment rate is the lowest anywhere in the nation, thanks in large measure, to the boom in gas drilling. Our state budget is in surplus. A recent study by the University of Oklahoma calculated that each dollar now being invested in natural gas drilling is generating three dollars in added wealth to our state's economy.

The economic benefits of the historically high drilling activity now underway are not confined to producing states. Record demand for tubular steel used in gas drilling is the one bright spot in the otherwise depressed steel industry. Virtually the only active markets for the American automobile industry are to be found in states like Oklahoma where the increase in drilling activity is creating new jobs and boosting consumer demand. This increase will continue through the 1980's and beyond if the NGPA incentive pricing system is not destroyed.

Decontrol of old, flowing gas would extract money from the very industries in America that are facing the most severe economic problems today. Farmers, small businesses, the steel industry, the auto industry would all be faced with significantly higher costs.

As the Wall Street Journal reported last week:

> "Nowhere are the burdens of natural gas decontrol more evident than at Owens-Illinois,Inc.'s glassbottle factory here. The plant has already had to close one of its four furnaces because of the sluggish economy, a decision that involved

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16/ Securities and Research Division, Op. Cit., Page 8.

> the layoff of 120 employees last March. Higher gas prices are 'the very last thing we need right now,' says John Elliot, the plant's personnel manager."17/

Access to Supplies for Intrastate Pipelines

Let me address one final question that has been raised -- the supply of gas to the intrastate market. You will undoubtedly hear reports that the NGPA, unless revised, will leave intrastate pipelines at a severe disadvantage in bidding for new supplies. For three reasons, we believe this concern to be unfounded. First, even though intrastate pipelines lack access to the lowest priced Section 104 flowing gas, these same pipelines have an important offsetting competitive advantage. Transportation and distribution costs are substantially less for intrastate users than for their interstate counterparts.18/ Intrastate pipelines can therefore afford a somewhat higher average wellhead cost of gas and still market supplies at a cost no greater than the cost to interstate consumers. Second, a 1981 analysis by the Energy Information Administration (EIA)19/ revealed that the gap in prices paid to acquire new gas by intrastate pipelines compared to interstate pipelines has been narrowing since 1978. As of the Spring of 1981, the gap had been reduced to only about 16¢ per Mcf -- a small fraction of the differential in relative transportation and distribution costs. Third, in a December 1981 report, the EIA cross-referenced data on prices paid by pipelines for unregulated deep gas, with data on pipeline reserves of Section 104 old flowing gas.20/ A review of this data reveals

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17/ Munson, Steve, "Flaring Up," Wall Street Journal, February 12, 1982, Page 1.

18/ Not only are transportation and distribution costs substantially lower in the instrastate than the interstate market. A much higher proportion of sales by intrastate pipelines are direct sales to end users -- further lowering costs and further enhancing the ability of intrastate pipelines to compete for new gas supplies.

19/ Energy Information Administration, U. S. Department of Energy, Intrastate and Interstate Supply Markets Under the Natural Gas Policy Act, May, 1981, Page 66.

20/ Energy Information Administration, U. S. Department of Energy, An Analysis of the Natural Gas Policy Act and Several Alternatives, Part I, December 1981, Page 66.

an apparent inverse relationship between the size of a pipeline's old gas reserves and the amount the pipeline has agreed to pay for decontrolled gas. In other words, so-called shallow cushion pipelines seem to be paying more, on the average, for deep gas than so-called deep cushion pipelines. These factors, combined with mounting gas surpluses suggest that intrastate pipelines, as a group, are unlikely to encounter significant problems in gaining access to new gas supplies. This judgment is shared by Foster and Associates in a June 1981 analysis of the gas industry outlook.[21]

Conclusion

Mr. Chairman, if the Natural Gas Policy Act is left alone, if the Congress rejects self-defeating new taxing schemes, the natural gas industry can bring our economy out of the shadow cast by OPEC.

Our country possesses at least 1,400 trillion cubic feet of recoverable natural gas -- 70 years of supply at present consumption rates.[22] This estimate represents only the share of our resource base that can be developed without use of extemely expensive new technologies. If our government chose to adopt an agressive pro-gas policy, requiring repeal of artificial restrictions on natural gas use, America has the capacity within this decade to develop supplies so abundant that gas could displace all liquid hydrocarbons outside transportation, leaving our country free to limit oil imports to whatever levels we select for diplomatic and international economic reasons. We could eliminate oil imports altogether if we chose to do so.

Skeptics may argue it can never be done. But, in 1978, skeptics argued that there was very little natural gas in America remaining to be found. Mr. Chairman, vast new reserves are now being developed and the NGPA incentive pricing structure has only just begun to work!

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[21] Foster and Associates, Inc., The Short Term Outlook for the U. S. Natural Gas Industry, Management Report, June 1981, Page 64.

[22] See Appendix B.

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As this Subcommittee is all too aware, rarely are legislators confronted with energy policy decisions that are free of agonizing economic trade-offs. What is extraordinary about the decontrol issue in 1982 is that there are no significant energy policy or economic benefits to be gained from raising the price of old gas -- only enormous and unnecessary costs. Conversely, there is everything to be gained -- more domestic energy production, lower oil imports, and a stronger and more secure economy -- from leaving the NGPA wellhead pricing provisions alone.

Thank you, Mr. Chairman.

APPENDIX A

2/16/82

INDEPENDENT GAS PRODUCER'S COMMITTEE

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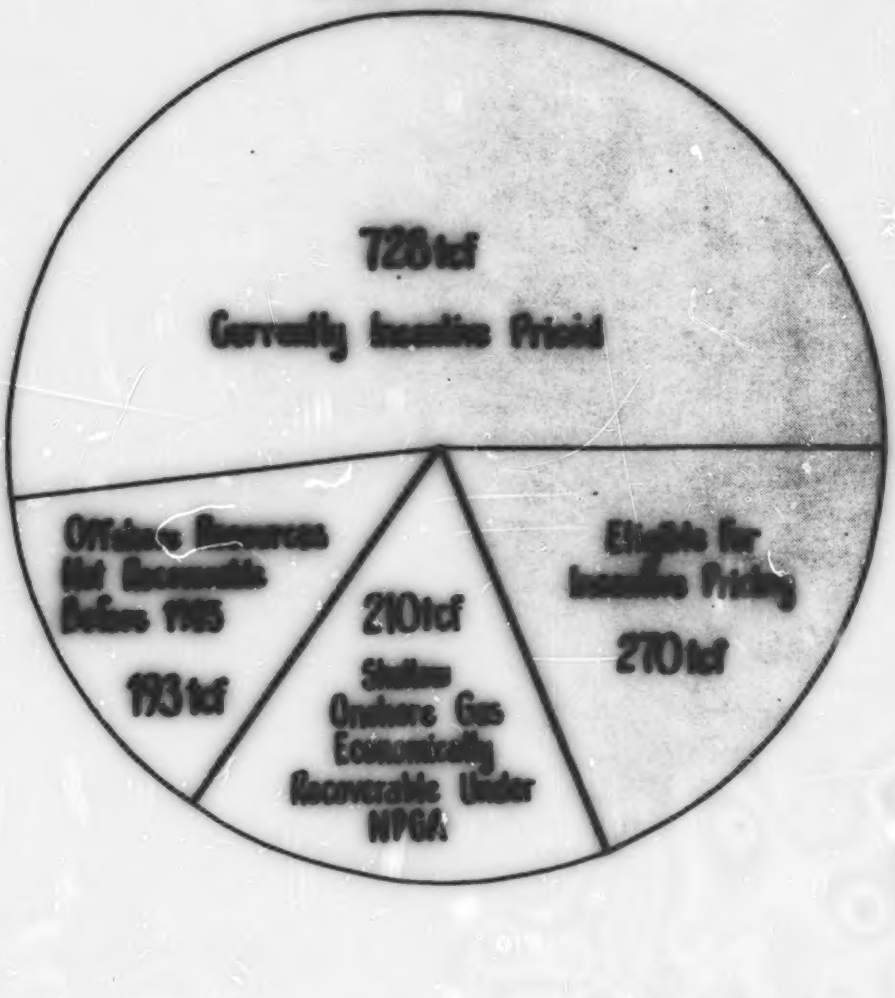
APPENDIX B

Potential Recoverable Natural Gas Supplies

Trillion Cubic Feet



LEGEND

Potential/Recoverable Natural Gas Supplies Which Are Already Incentive Priced

		(Trillion Cubic Feet)
Onshore beneath 15,000 feet[1]		240
Tight sand formations[2]		383
Coal seams[3]		45
Devonian shale[4]		60
	Subtotal	728
	Share of Total Potential Supply	52%

Potential Recoverable Natural Gas Supplies Which Can Be Incentive Priced Under NGPA

Onshore between 10,000 and 15,000[5]		211
Offshore beneath 200 meters[1]		59
	Subtotal	270
	Share of Total Potential Supply	19%

Potential Natural Gas Supplies Which Because of Permitting and Logistical Requirements Cannot Be Recovered Before January 1, 1985 Regardless of Price

Offshore above 200 meters[1] (Note: Also gas located beneath 200 meters listed above)		193
	Subtotal	193
	Share of Total Potential Supply	14%

Remaining Potential Natural Gas Which is Economically Recoverable Under NGPA

Onshore above 10,000 feet[5]		210
	Subtotal	210
	Percent of Total Potential Supply	15%

1/ Potential Gas Committee, Potential Supply of Natural Gas in the United States. December 31, 1980.

2/ Ibid. Mid-point high and low estimates presented by the Committee.

3/ National Petroleum Council (1980).

4/ Potential Gas Committee. Use of high estimate from range presented by the Committee reflects high incentive price now available under NGPA.

5/ GHK estimate based on Potential Gas Committee projection of the potential supply of gas located onshore above 15,000 feet and on recent drilling experience in major producing areas.

APPENDIX C

January 13, 1982

U.S. Senator Robert J. Dole
2213 Dirksen Office Building
Washington, D.C. 20510

Dear Senator:

As the second session of Congress begins, considerable attention will, undoubtedly, be paid to the issue of natural gas deregulation. While deregulation in the long run is philosophically desirable, we are concerned that an acceleration of decontrol at a more rapid rate than is currently mandated by the Natural Gas Policy Act would be economically and politically counterproductive.

There is no question that the total decontrol of oil prices has lead to an energy conservation effort in the country. It has, in effect, eliminated the government subsidy for imported oil. However, natural gas is not imported in any significant amounts so the critical element for gas is to maintain the economics of production for the producer and for the consumer.

We appreciate and understand the climate in which the NGPA was enacted. It is an extremely complex law, but producers have adjusted to it and learned to live with it. For all its faults, it does provide a systematic pricing structure and time certain when controls on certain categories of gas will expire. Although natural gas prices are far below the equivalent for oil, there is a natural gas exploration boom in the country, and there is at least a temporary excess supply of gas in the country today.

We suggest that instead of decontrolling the wellhead prices of natural gas, it would be advantageous to the consumers and the producers to eliminate the restrictions on the use of natural gas. This would allow the producers to sell more of the gas they are finding, and this would allow the country to further reduce oil imports.

Senator Robert J. Dole
January 13, 1982
Page Two

We realize a decontrol coupled with a tax on gas is an attractive "revenue enhancer" for the government. The tax, however, is really levied on the consumer by virtue of increased prices, particularly on old gas. We hope the mistakes and misconceptions of the windfall profit tax are not repeated.

As gas producers from the state of Kansas we are writing this letter to let you know that there are producers who believe that it is unwise and unnecessary to tamper with the NGPA at this time. We are always available to provide you with any information you or the staff may deem helpful.

John Graves

Jerry Shawver

Dick Smith

Warren Tomlinson

Bob Williams

Bob Williams

W. R. Murfin

Don Slawson

Roger McCoy

Carl Scoitz

Tom White

MARTIN EXPLORATION COMPANY
3501 N. CAUSEWAY BOULEVARD
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METAIRIE, LOUISIANA 70002

504-837-0000

January 18, 1982

The President
The White House
Washington, D C 20500

Dear Mr. President:

We the undersigned ask that you:

Please, Don't Abandon Your Promise To Veto A Windfall Profits Tax On Natural Gas! Abandoning such a hard, basic and visible promise would indicate a "Carter-Like Weakness of Purpose" from which your leadership would never recover.

We also believe that this is not the time to tie-up yourself and Congress on a renewed and extended battle on the natural gas issues. Our problem is the economy! And, the problem is now!!

We ask that you focus your early-1982 priorities for regaining economic control and lowering interest rates on 1) increasing excise taxes on alcohol, gasoline and tobacco; and, 2) imposing an import tax on foreign oil. The latter would have the added benefit of lending assurance to our ultimate self-sufficiency in energy.

After the 1982 elections, civilian spending can be substantially reduced and our personal deduction for interest paid on everything except car and home loans can be eliminated.

These steps will restore our economy, and Congress is ready to accept such a package. We need your great lead to make it happen.

After we have fixed the economy, then we should work on Natural Gas Decontrol. But, First Things First!

Respectfully yours,

COMPANY	ADDRESS	SIGNED BY	TITLE
Martin Exploration Co.	3501 North Causeway Metairie, LA 70002		President
Jay Engineering, Inc.	10121 Idlewood Place River Ridge, LA 70123		President
CRUTCHER-TUFTS CORP	200 SARATOGA BLDG NEW ORLEANS LA 70112		V-Pres.
[illegible]	[illegible]		[illegible]
[illegible] Energy Co	[illegible]		Pres.
Beau Corp Oil & Gas Co	1010 Common St.		Pres.
Green Exploration Co.	704 Cotton Exchange Bldg [illegible]		Pres.
[illegible]	1600 [illegible] New Orleans [illegible]		[illegible]
[illegible]	[illegible] Metairie LA 70[illegible]		[illegible]
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The President
January 18, 1982
Page Two

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Representative RICHMOND. Thank you, Mr. Taliaferro. Mr. Lawrence, how do you feel about Mr. Taliaferro's rosy predictions?

Mr. LAWRENCE. Basically in accord. I would say this, though. We had a problem with the NGPA as it is now being implemented, and that has to do with the so-called indefinite escalator clauses that are prevailing in virtually all of the contracts that have come on stream since passage of the NGPA. These flexible clauses are those that tie their price to some oil product, No. 2 fuel oil, plus a premium, and virtually all of these contracts have what is known as the favored nation clause, which says I will be able to get what is the highest price paid on the pipeline, in the field, in the area, in the State, or south of the Mason-Dixon line. They have a way of cascading that highest price throughout the industry.

These clauses are what got this industry in trouble in the early 1950's. There you overnight were escalating prices from the range of 8 to 10 cents per million Btu to 20 cents per million Btu. That was unacceptable. Now we're talking about bigger numbers. We say that those indefinite escalator clauses that will be triggered on January 1, 1985, have to be addressed legislatively and have to be diffused.

Now we are not saying disregard all contracting practices between parties. But these indefinite escalators were a product of this phaseout over a long period of time, which we were not for. We were ready to deregulate the new gas immediately. But the political compromise was to phase it out over 6¼ years. The inability of a lot of pipelines to bargain with the producers left in virtually all of these contracts what we call an outmoded contracting practice that is going to get this industry in trouble if all these clauses are triggered.

So we're saying that has got to be dealt with, and the solution, we think which is to prevent those contracts from triggering, requires the parties to renegotiate in the current market conditions, and if there is an inability of the parties to get together after a reasonable period of time, then the producer would have a right to sell to someone else. But that's a very serious problem.

Now as to the low-income consumer in your district, we have been very supportive of the need for low-income fuel assistance. This part of the oil windfall profits tax that was earmarked initially for the natural gas consumer should be passed on through to him.

The consumer price revolt that is coming and may be here is a very serious concern to us. It's like that old television show that said we're mad as hell and we aren't going to take it anymore. You can deregulate the field price of everything tomorrow and still all my member companies are going to be regulated. Interstate pipelines are regulated at the Federal level, distribution companies are regulated by the New York commission, and with all that consumer pressure on all of these regulated gas distribution companies, the pressure is to take that wrath out of the financial hide of the distribution and transmission companies. With that happening, we have a severe problem in being able to deliver and serve those consumers.

So the consumer price impact is a very severe one to us.

Representative RICHMOND. Mr. Cooper, how do you feel about Mr. Taliaferro's statement of superabundance—the market factors would then start working in 1985 with ample gas, additional supplies of coal, and adequate oil. Don't you think that's a wonderful, wonderful thing to look forward to?

Mr. COOPER. I think we heard the same things when heating oil was decontrolled, crude oil was decontrolled, and gasoline was decontrolled.

I am intrigued by the 25-percent rate of return sort of with everything thrown in. The energy industry as a whole only makes 20 percent and the rest of the economy is 15.

Representative RICHMOND. I still can't figure out whether it is 25 percent with everything thrown in or not.

Mr. COOPER. I think it was everything thrown in, because a successful well would be higher than that. But that rate of return is almost twice as high as the average rate of return in the industrial sector, and that's exactly the kind of distortion that——

Representative RICHMOND. Except this is venture capital, though.

Mr. COOPER. Well, it's venture capital, but GHK is not a small-time outfit. It's not mom and pop and three other people on a thousand dollars. Venture capital is venture capital. But there is a very stable rate of return in the whole energy industry. It's at 25 percent. The Business Week's most recent calculation put the whole energy industry at slightly over 20 percent, and I as I said, the average for the entire industrial sector is only 15. If you looked at automobiles, airlines, agriculture, steel——

Representative RICHMOND. Agricultural equipment.

Mr. COOPER. That's right. If you look at the rest of it, I think you make the point I wanted to make, that this economy has been enslaved to the energy sector, and I would hate to see us do it again with natural gas.

Representative RICHMOND. Those other companies would be thrilled to have 5-percent return after taxes.

Mr. COOPER. That's right.

Mr. TALIAFERRO. Congressman, can I respond to one point?

Representative RICHMOND. Yes.

Mr. TALIAFERRO. I recognize that our current rate of return is above every other industry in this economy. We are indeed the bright spot, and if you now go to the gas producing States such as mine you will see the physical evidence of the bright spot. As a matter of fact, the Chrysler dealer in Elk City, Okla., told me last week he was turning his inventory every 6 weeks. I quite agree with that.

Representative RICHMOND. And you have no unemployment either.

Mr. TALIAFERRO. That's right.

Representative RICHMOND. My colleague, Glenn English, who sits next to me on the Ag Committee, keeps telling me to send some of my unemployed people down to him, he needs them very badly.

Mr. TALIAFERRO. That's exactly right. We are at the limit of our trained work force.

Now, what I am saying is this. That same thing about abundance may have been said about oil decontrol. We didn't say it. And here is the reason it's different. Oil exploration and development in the domestic United States is mature. The supplies that can be brought on stream are marginal. The gas supplies and the potential for them in the continental United States are not mature. We had explored in our basin less than 3 percent of those sediments, and that's the reason I say that if we keep the current pricing scheme on track and continue to fuel this exploration effort, the abundant supply that is elicited will be the economic savior.

I also suggest to you, Congressman—and I can't leave without making my last point—how counterproductive we believe it would be to attach a severance tax on natural gas, and particularly in combination with old gas decontrol, which would compound the reduction of the new gas exploration market.

Indeed, DOE itself, one of the strongest advocates of old gas decontrol, in a November study recognized that decontrol with the windfall profits tax would mean less new gas production. I think Mr. Cooper referred to this study himself. Less new gas production and higher prices. It's unnecessary.

Representative RICHMOND. Mr. Taliaferro, Mr. Cooper, Mr. Lawrence, thank you very much. We certainly learned an awful lot.

We would like to keep the record open for 2 weeks and send you some additional questions. I'm afraid we haven't even gotten to the beginning of the list of the questions we would like to ask you and the former panel. I hope you can get the answer back within 2 weeks.

Mr. LAWRENCE. Congressman, could I just make one point in support of what Mr. Taliaferro just said. I think it is a very important one. In early 1977, the Deputy Secretary of Energy went on national television and said as a long-term energy contribution to this Nation natural gas has had it. Well, no one is saying that anymore. The attitude has changed. The facts have changed. It is the bright spot in the energy economy, and you have had some very prominent people make that point.

Thank you.

Representative RICHMOND. Thank you, Mr. Lawrence.

I would like to enter in the hearing record a statement of the Process Gas Consumers Group, together with their covering letter. This statement was presented before the Senate Committee on Energy and Natural Resources. Their representative wasn't able to be here, but we will enter their statement for the record.

[The letter and statement referred to follow:]

PGC
PROCESS GAS CONSUMERS GROUP • SUITE 800/1666 K STREET, N.W.
WASHINGTON, D.C. 20006
202 872-9349

February 18, 1982

The Honorable Gillis W. Long
Chairman
Subcommittee on International Trade,
   Finance and Security Economics
Joint Economic Committee
G133 Dirksen Senate Office Building
Washington, D.C.   20510

Re: Accelerated Decontrol of Natural Gas

Dear Congressman Long:

The Process Gas Consumers Group (PGC) respectfully submits the enclosed testimony to the Joint Economic Committee and requests that it be made a part of the record of the Committee's hearings today on natural gas decontrol. This testimony was originally presented on November 6, 1981 before the Senate Committee on Energy and Natural Resources. Also enclosed is PGC's supplemental testimony, January 8, 1982, in response to follow-up questions from that Committee.

PGC is an association of industrial gas consumers organized to promote the development and adoption of coordinated, rational, and consistent federal and state policies with respect to gas use. Our member companies own and operate hundreds of plants in virtually every state in the nation and purchase natural gas directly or indirectly from both interstate and intrastate pipelines, with most of our facilities on the interstate system. (A list of our members is included as Appendix A to the testimony.)

As you will note, our testimony focuses on the economic implications of failing to accelerate the process of decontrolling natural gas and otherwise remedy the major flaws in the Natural Gas Policy Act of 1978 and related statutes. In PGC's view, the part-regulated, part-deregulated structure of the current law seems to be producing the worst of all worlds -- higher prices and lower domestic supplies, plus significant price and supply disparities and distortions across the country. Thus, in its testimony, PGC makes detailed legislative recommendations for achieving timely deregulation of natural gas and elimination of discriminatory restraints on gas use.

We hope that you will find PGC's testimony useful and informative. We appreciate this opportunity to present our views on natural gas decontrol and would welcome the opportunity to work with the Members and Staff of the Committee on this and related issues.

Respectfully submitted,

Jack Elam

Jack Elam
Chairman of PGC

Enclosure

PGC PROCESS GAS CONSUMERS GROUP • SUITE 800/1666 K STREET, N.W.
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202 872-9349

BEFORE THE
UNITED STATES SENATE
COMMITTEE ON ENERGY AND NATURAL RESOURCES

STATEMENT OF
JACK ELAM
ON BEHALF OF
THE PROCESS GAS CONSUMERS GROUP

November 6, 1981

I am Jack Elam, Vice President of Cone Mills Corporation appearing here on behalf of the Process Gas Consumers Group. Appearing with me are Gerald R. Curtis of Armco Inc. and Edward J. Grenier, Jr. of Sutherland, Asbill & Brennan in Washington, D.C.

The Process Gas Consumers Group is an organization of industrial consumers of natural gas organized to promote the development and adoption of consolidated, rational and consistent federal and state policies concerning industrial process gas uses. Our member companies own and operate roughly 800 plants in virtually every state in the nation and purchase natural gas directly or indirectly from both interstate and intrastate pipelines, with most of our facilities on the interstate system. A list of the members of PGC is attached as Appendix A.

My comments on the implementation of Title I of the Natural Gas Policy Act of 1978 are, therefore, from the vantage point of industrial consumers of natural gas that are concerned with obtaining adequate gas supplies at reasonable prices. Members of PGC are acutely concerned about this issue because they require natural gas for industrial processes that cannot utilize alternate fuels.

At the outset, let me make clear that, contrary to the claims of some, implementation of Title I of the NGPA is not proceeding as intended. Title I was intended by its authors to provide a mechanism for a smooth transition to a deregulated market. However, because of inherent flaws in its structure, erroneous assumptions as to oil prices, and limitations on FERC's authority to address developing problems, it has not worked.

Because of its part-regulated, part-deregulated structure, Title I is severely distorting the exploration and development, distribution, and price of natural gas in the United States. Title I of the NGPA is causing rapidly rising wholesale and retail prices without inducing corresponding increases in gas supplies; it is producing surpluses in some locations while shortages are arising in others; and it is contributing to the demand for energy imports, likely to include exorbitantly priced LNG from Algeria. In effect, implementation of Title I may be producing the worst of all worlds -- higher prices and lower domestic supplies, plus significant price and supply disparities across the country. Further, the problem is likely to get worse, not better, over the next several years.

I. Distortions In Gas Supply Distribution

Title I's Structure Disadvantages Some Pipelines in Purchasing Gas

One of the greatest problems from the perspective of the industrial user is that implementation of the pricing provisions in NGPA Title I is seriously distorting the allocation of natural gas supplies among pipelines and regions. Many intrastate and interstate pipelines are seriously disadvantaged in the competition to acquire new supplies under the Title I scheme.

The problem stems from Title I's "vintage" price and partial deregulation structure, which, as of November 1981 set ceiling prices for regulated categories ranging from 26¢ per thousand cubic feet ("Mcf") for some old interstate gas (Section 104) to $2.94 per million Btu (one MMBtu approximates an average Mcf of gas) for "new natural gas" (Section 102) to $3.15 per Mcf for stripper well gas (Section 108). Of these categories, some gas sources will be deregulated in 1985, some in 1987, and some will never be deregulated by the NGPA.

On the other hand, Section 107 of the NGPA, has already deregulated natural gas from four types of wells -- (1) gas from new wells drilled to a depth of more than 15,000 feet, (2) geopressurized methane, (3) gas produced from coal seams, and (4) gas produced from Devonian Shale -- and these prices currently go at least as high as $9.77 per Mcf.

The inequity among consumers and pipelines arises because pipelines' relative shares of gas in the various NGPA categories vary widely. Some interstate pipelines have large blocks of cheap, old gas that will never be deregulated -- a so-called old gas "cushion" --, while other pipelines have very little cushion. Because each pipeline's average resale price is the key to its gas marketing ability, this uneven distribution of old, cheap gas gives some pipelines a very substantial bidding advantage for new gas. That is, a pipeline with a large cushion of old, cheap gas can easily outbid other pipelines to get Section 107 gas because it can absorb substantial volumes of extremely expensive gas before its system average resale price causes it to lose large numbers of its customers.

Furthermore, pipelines with comparatively large old gas cushions may also have an advantage in buying major categories of price controlled gas (e.g., Section 102 gas). This can occur because, even though no pipeline can pay more than the NGPA ceilings for price controlled gas today, those with large cheap gas cushions can promise to pay higher prices after partial deregulation occurs in 1985.

Interstate v. Intrastate Pipelines

Evidence that the old gas cushion gives interstate pipelines a significant advantage over intrastate pipelines can be seen in several ways. First, in 1979, gas reserve additions were only 70% of gas production on a national basis, while in the interstate market, gas reserve additions exceeded production by 21%, according to FERC data. Second, while several interstate pipelines claim to have temporary oversupplies, intrastate pipelines in Louisiana are beginning to have gas shortages. Third, a recent DOE compilation of data filed with the FERC demonstrates the interstate advantage. (See The Natural Gas Market Under the NGPA (DOE/EIA/AR-0289 June 1981)). For example, according to Section 102 filings through April 30, 1981 (i.e., new natural gas discovered after February 19, 1977), interstate buyers in Louisiana are obtaining 93% of the estimated production; in Texas, 64% of the Section 102 production; and in Oklahoma, 62%.

Differences Among Interstate Pipelines

The problem of uneven supply distribution, however, is not merely an interstate versus intrastate problem. No two interstate pipelines have the same mix of old gas sources, and neighboring pipelines serving the same states can have very different supply and price positions. Thus, while several interstate pipelines have bought so much gas that they confront short term surpluses, the FERC's most recent survey reveals that nine interstate pipelines expect to curtail firm contract service (in addition to interruptible service) this winter. The pipelines projecting curtailment of firm service are Arkansas Louisiana, Eastern Shore, El Paso, Southern Natural, Tennessee Gas, Texas Eastern, Transcontinental, Transwestern, and United Gas Pipe Line. (Attached as Appendix B is a list of the states served by the pipelines mentioned in this testimony.)

The magnitude of the differences among interstate pipelines can also be illustrated by the fact that, according to an Energy User News survey of pipeline sales and revenues in July, 1981, the average wholesale rates charged by major interstate pipelines varied by as much as $2.00 per thousand cubic feet (Mcf) of gas. Even neighboring pipelines with overlapping service areas have large differences. For example, the same survey indicated that local distributors paid an average price of $4.01/Mcf to Transcontinental Gas Pipe Line, whose major service areas runs from South Carolina to New York, while distributors paid an average of $2.29/Mcf to Texas Eastern, whose major deliveries serve states from Pennsylvania to New England. Obviously, these pipelines have not had equal need to purchase high cost supplies to date, and they are not going to be equally capable of acquiring new gas supplies over the next several years. Transco is even looking at a massive and costly propane injection project to offset its gas shortfalls.

Off-System Sales

One response to the uneven distribution of gas supplies has been for pipelines with excess supplies to make off-system sales to non-traditional customers, including other pipelines, distributors and electric utilities. Unfortunately, these sales have their own adverse consequences. When a pipeline is buying high cost gas for its system supply and simultaneously selling gas off-system at average rates, the pipeline's traditional, on-system customers are required to subsidize those sales. For example, if Columbia Gas Transmission simultaneously purchases Section 107 gas for over $9.25 per Mcf and makes off-system sales at $3.00-$3.50 per Mcf (as it currently proposes to do), its on-system customers will incur additional costs of at least $5.75-$6.25 per Mcf of gas sold off-system -- gas that they will never receive.

In addition, off-system sales may encourage certain pipelines to keep buying high cost supplies beyond their own customers' needs, thereby further bidding up the prices for

Section 107 sources. Also, although these sales tend to spread excess volumes in the short run, they may distort pipelines' relative shares of long term supplies. For example, pipelines with short term surpluses but long term deficiencies may be encouraged to dump gas off-system rather than husbanding their existing reserves. Alternatively, some pipelines may be able to use off-system sales to relieve short term oversupplies while continuing to lock up long term supplies to the future disadvantage of other pipelines. In addition, to a large extent, these sales appear to be promoting gas usage in electric utility boilers, which have long been recognized as the most wasteful form of gas usage and which are an absurd use of gas costing $8-9 per Mcf in the field. Unfortunately, the FERC has still not fully considered the adverse consequences of pipelines' off-system sales. (See Appendix C).

II. Gas Price Distortions

Wellhead Prices under the NGPA: $0.26 - $9.77 and Rising

While some pipelines pay as little as 26¢ per Mcf for some old gas, at least 10 pipelines are paying over $9.00 per Mcf for Section 107 supplies -- equivalent to oil for $55 per barrel. The current bidding lead for Section 107 goes to Transcontinental Gas Pipe Line at $9.77, but others are close behind, and $10.00 gas is expected soon. Currently, the ten interstate pipelines paying over $9.00 per Mcf under one or more Section 107 contracts are Columbia, Transcontinental, Texas Eastern, Texas Gas, Mid Louisiana, Tennessee Gas Pipeline, Southern Natural, Kansas Nebraska, El Paso, and Transwestern. Several other pipelines are paying over $8.00/Mcf.

Where are these extraordinary price increases coming from when the NGPA restricts most prices to a far slower rate of escalation? The answer to that question again lies in the part-controlled, part-decontrolled structure of Title I.

Due to the averaging effect of the old gas cushion, whose prices are far below the price of oil, some pipelines can pay extraordinary prices for relatively small volumes of high cost gas before the average retail price of gas exceeds the price of competitive fuels. This is illustrated by the fact that the crude oil equivalent of NGPA prices for the major price-controlled categories of gas would range from $1.48 per barrel (equivalent to 26¢/Mcf Section 104 gas) to $16.70 per barrel (equivalent to $2.94/Mcf Section 102 gas).

As a result, producers of the narrow categories of deregulated gas, as well as foreign countries like Algeria, can command extraordinary prices before "average" market clearing prices are reached at the retail level. Thus, while the average wellhead price for gas was estimated by the Department of Energy to be $1.77 per Mcf in May, 1981 (the equivalent of $10 per barrel of crude), Section 107 gas is frequently selling for substantially above $9 per Mcf -- i.e., over five times the average wellhead price for gas and the equivalent of $55 per barrel oil. Similarly, Trunkline Gas Company has told FERC it expects to pay over $8 per MMBtu (roughly equivalent to an average Mcf of domestic gas) for delivered Algerian LNG. At least three other major pipelines are also seeking to import Algerian LNG.

To put the Section 107 contracts in perspective, many users believe that, in a truly free market, the retail price for natural gas would have to compete with the retail price for residual oil, since many users can readily switch between those fuels. Consequently, most expect that the free market price for natural gas at the wellhead would approximate the retail price of residual oil minus gas transportation and distribution costs. That price is roughly half what is now being paid in the NGPA's hybrid market for Section 107 deregulated gas. Yet, while the Section 107 prices are far in excess of anything that would occur in a free market, they are in fact promoted by the depressed prices established by the NGPA for other categories of gas.

Effect on Interstate Pipelines Rates

The rising prices paid by interstate pipelines for natural gas are promptly passed through to customers through rate increases pursuant to purchased gas adjustment ("PGA") rate mechanisms. Under FERC regulations, interstate pipelines typically make PGA filings twice per year to modify their rates to reflect changes in purchased gas costs. (Some pipelines make annual, rather than semi-annual, PGA filings, but the principles are the same). For pipelines that file semi-annually, PGA rate changes reflect the pipelines' projections of increased gas costs during the upcoming six-month period, with adjustments for any over- or under-collections during the prior six months. In turn, local distribution companies generally pass their purchased gas cost changes through to consumers under state-regulated PGA mechanisms.

Many PGA increases have been extremely large under the NGPA. For example, Columbia Gas Transmission Corporation, which serves eight midwestern and eastern states, has filed for PGA increases of $0.58 and $0.75 per Mcf just this year. Similarly, Transco had a $0.67 increase in March 1981; Colorado Interstate Gas Co. had increases of $0.85 in October 1980 and $0.41 in October 1981; and El Paso Natural Gas proposed increases of $0.36 and $0.66 in 1981. In addition, Trunkline has had increases of $0.54 and $0.48 so far this year, with an additional $1.20 increase expected when Algerian LNG shipments start later this year! (See Appendices D-F).

In fact, according to a PGA protest filed by the Public Service Commission of New York and the North Carolina Utilities Commission, Transcontinental Gas Pipe Line's adjusted base cost of gas rose from $0.825 per MMBtu as of September 11, 1978 to

$2.697 per MMBtu as of March 1, 1981, an increase of 227%. (Attached as an appendix).

Not surprisingly, according to an Energy Users News survey, average retail gas rates have risen by 31% over the last year.

The ultimate effect of the bidding for Section 107 gas and the uneven distribution of the old gas cushion is that rates for natural gas vary by large sums all over the country. As noted previously, interstate pipelines' rates differ by as much as $2 per Mcf and neighboring pipelines can differ by more than $1.70 per Mcf. As a further illustration, an Energy Users News survey of May, 1981 retail rates in eight cities shows that residential rates varied widely, *e.g.*, from $3.87/Mcf in Chicago to $5.49/Mcf in Seattle to $7.63/Mcf in New York City. A similar survey of retail rates in eight other cities during April reached comparable results, with residential gas prices ranging from $3.40/Mcf in Kansas City to $5.42/Mcf in Richmond to $5.98/Mcf in Newark.

Among industrials, equally efficient competitors in two areas can have very different competitive positions for no reason other than fortuitous differences in the price and supply of gas in their areas.

III. Additional Contract Problems: Price Escalator and Take-or-Pay Clauses Are Also Extreme

Moreover, the extraordinary Section 107 prices tell only part of the story. Most gas purchase contracts signed since April 20, 1977 contain indefinite price escalator terms, usually "most favored nation" clauses. "Most favored nation" clauses require gas prices to keep rising to match the highest prices being paid under one to three other contracts for gas in a specified area. which in some contracts may include as many as seven states and two foreign countries. Many of these contracts also have escalation clauses that tie post-deregulation prices to unrealistic levels, such as 110% of the retail price for expensive No. 2 fuel oil. In addition, some of these same contracts have fixed minimum price terms defined by formula. Extreme escalator provisions tied to No. 2 oil or unreasonable formulas could trigger the operation of virtually all the "most favored nation" clauses in 1985, creating a domino effect of higher prices.

Over and above the price clauses, most new gas contracts contain "take-or-pay" clauses which require pipelines to pay for 85% to 90% of the supplies tendered by the producer in any month or year, even when the buyer has no need for those supplies because of cheaper alternatives. These clauses often force pipelines to dump gas off-system or under electric utility boilers just to avoid prepayment penalties. Onerous take-

or-pay terms in new high cost gas contracts can also force pipelines to cut back on purchases from much cheaper gas sources, as Columbia has done in Ohio.

To illustrate the combined effect of these clauses, consider two contracts signed by Columbia Gas Transmission in the Rocky Mountain Overthrust area. These contracts require Columbia to pay the highest of (1) a formula price that will go from $10.32 per Mcf on 1/1/85 to $18.75 per Mcf on 1/1/90, (2) 110% of No. 2 oil in New York City, or (3) the average of the highest prices paid in any two contracts in a seven-state area. Even though another contract clause ostensibly permits price renegotiations to relieve either party from extraordinary hardships, presumably including the pipeline's inability to resell the gas, that renegotiation clause would not permit the price ever to go below the formula price. Further, that clause can only be invoked once every five years. Moreover, under its take-or-pay commitments, Columbia will also have to pay for 90% of the gas offered by the sellers, regardless of whether its customers need or want those high cost supplies. (A copy of the key terms in one of these contracts is attached as Appendix G).

Unless appropriate steps are taken now, such extreme price and non-price contract provisions will combine with the NGPA's terms to cause an extraordinary jolt in 1985, when prices under thousands of Section 102, 103, 105 and 106 contracts will be deregulated. At that point, virtually every pipeline in every state will suddenly have to reckon with price escalations whose impacts they may have grossly underestimated when signing gas contracts in the early 1980's. The target gas prices being set today will be far out of line with long and short run market clearing levels, and price renegotiation clauses that are being included in some contracts may not relieve consumers of extraordinary price escalations.

While the sudden price explosion would eventually be worked out through market forces, that would occur only over a period of many turbulent months as massive price increases are met with sharp consumer resistance in the form of fuel switching and conservation and as pipelines are forced to seek renegotiation of gas purchase contracts. As gas demand is lost, the remaining consumers will also have to pick up a larger share of the gas companies' fixed costs, thereby exacerbating the problem of rising wellhead prices. Substantial pressure will also be placed on Congress to extend gas price controls even though such a "quick fix" would only worsen the longer run problems of supply, demand and price.

IV. Demand Distortions

In addition, the NGPA's pricing structure tends to distort natural gas demand patterns. In a free market, price is the balancing mechanism between demand and supply. However, fixing gas prices below market clearing levels simultaneously increases demand for gas and reduces incentives to discover new supplies, thereby creating shortages.

The most obvious example of demand distortions under the NGPA is the recent sharp increase in wasteful gas usage by electric utilities. Between 1978 and 1980, electric utilities' annual consumption of natural gas has risen by half a trillion cubic feet, from 3.19 Tcf to 3.68 Tcf. Thus, even as industrial consumption has dropped and residential consumption has remained more or less constant, gas usage by electric utilities has risen to its highest level since 1972. This extraordinary increase is attributable to the price advantage that gas has relative to alternate fuels for many consumers. (Industrial boiler fuel users that have been singled out for incremental pricing under NGPA Title II do not benefit from this price advantage. Instead, by bearing a disproportionate share of new gas costs, they further subsidize the low prices of others, such as electric utilities, which are exempt from incremental pricing).

One of the consequences of increasing demand is likely to be renewed gas shortages in the pre-deregulation period. For this winter, nine pipelines are projecting curtailments of gas sold under firm contracts. Further, there are indications that more substantial and widespread curtailments -- even reaching industrial process uses -- could occur in the 1983-1984 period. Under that scenario, supply and demand will be brought into balance in 1986 by very substantial utility and industrial fuel switching in response to rising prices. Unfortunately, the sudden price and demand changes will cause considerable turmoil and some hardship before market forces restore the balance.

V. Limitations on FERC's Authority to Address Title I's Problems

Under the NGPA, the FERC has only limited tools for easing the transition to substantial deregulation. Most obviously, the FERC's authority to limit the aberrant Section 107 prices that are induced by Title I's structure is greatly restricted by Section 601 of the NGPA. That section declares (1) that all prices permitted under the NGPA, including prices for deregulated sources, are "just and reasonable" for purposes of wellhead price regulation under the Natural Gas Act and (2) that the FERC must pass such prices through to consumers "except to the extent the Commission determines that the amount paid was excessive due to fraud, abuse, or similar grounds."

The meaning of the narrow standard "fraud, abuse, or similar grounds" (and thus the FERC's authority to restrain soaring prices paid by interstate pipelines for deregulated gas) is far from being resolved, although it is currently being debated in purchased gas adjustment ("PGA") cases involving several major interstate pipelines, including Columbia Gas Transmission, Transcontinental Gas Pipe Line, Michigan Wisconsin, Colorado Interstate Gas, Southern Natural and El Paso Natural Gas Co. These PGA challenges are being brought by consumers, state authorities, and some distribution companies. (See, e.g., Appendices D-F). However, these cases are proceeding at a slow pace, and not all pipelines that are buying Section 107 gas are being investigated.

Even when these individual cases are completed, the FERC may decide that it cannot do very much under the law to restrain Section 107 prices. In the meanwhile, as noted above, retail prices are soaring and price disparities between regions and localities continue to exist.

Apart from its limited authority over Section 107 prices, the FERC appears to have residual authority to regulate the non-price terms in interstate gas sales contracts, including Section 107 contracts. However, the possibility of regulating non-price terms -- for example, take-or-pay terms -- to mitigate the harm of Section 107 prices has not been seriously explored by FERC in any public proceeding.

Under NGPA Section 315, the FERC could at least require pipelines to file and make public copies of gas purchase contracts, including Section 107 contracts, for informational purposes. Although this would not resolve distortions caused by the NGPA, such a requirement would enable the FERC and the public to stay informed about the trends and magnitude of the Section 107 problem. However, to date, the Commission has failed to exercise even this authority and, if anything, has enforced the secrecy surrounding Section 107 contracts through strict protective orders in the various PGA cases.

In sum, the FERC lacks the necessary tools for dealing with the NGPA's problems, which are basically structural in nature.

VI. Gas Supply Development is Being Slowed

The available evidence clearly indicates that the mechanism for controlling prices under Title I is adversely affecting overall natural gas exploration and development. Although you will undoubtedly hear gas company representatives tell you that total drilling for gas and oil has increased significantly since 1978, the large increases in drilling are attributable almost entirely to the search for decontrolled oil, not price controlled gas.

Thus, for example, DOE data indicates that annual oil well completions increased by 39% between 1979 and 1980, while gas well completions increased by only about 7%. Similarly, in the first seven months of 1981, oil well completions increased by another 40% over the same period in 1980, while gas well completions rose by only 6%. In fact, annual gas well completions have increased at a slower pace since passage of the NGPA than in five of the six preceding years. The statistics for drilling footage for gas and oil in 1979 and 1980 show trends similar to those for well completions.

Furthermore, although the gap appears to have narrowed somewhat, the available data for 1979 and preliminary data for 1980, based on an Oil and Gas Journal survey of 27 companies, indicate that production has continued to outpace reserve additions since passage of the NGPA. To be sure, some very large deep well discoveries have been reported. However, it has also been reported that production rates from those reserves will generally be slower than from other gas reserves discovered in recent years.

In addition, although some will tell you that exploration has increased, DOE data indicates that exploratory gas wells have constituted a lower percentage of total gas wells in each year between 1978 and 1980 than in any of the preceding 5 years. American Petroleum Institute data indicate that exploratory gas well completions remain only about 8% of total gas well completions, roughly the same level as has existed throughout the period 1972 through 1980.

The failure of gas exploration and development to keep pace with oil is not surprising inasmuch as the gap between decontrolled oil and controlled new gas prices has, in fact, widened substantially since passage of the NGPA. According to the Department of Energy, the ratio of crude oil to natural gas wellhead prices (on a Btu basis) has increased from 1.75 in 1978 to 2.50 in 1980.

More Gas Exploration Is Badly Needed

The NGPA's failure to induce substantial expansions in gas exploration is significant, too, because most experts are predicting that conventional domestic gas production will decline significantly during this decade. In particular, most are predicting that gas deliveries from fields in the Gulf of Mexico will drop very sharply in the mid-1980's. This expected drop could cut a major source of supply for a number of Eastern and Midwestern interstate pipelines, such as Transcontinental Gas Pipe Line, Columbia Gas Transmission, Tennessee Gas Pipeline, Trunkline, Michigan Wisconsin, Natural Gas Pipeline, United Gas Pipeline and Texas Gas Transmission. Consequently, it is important that Title I's limitations on the search for new sources be lifted as promptly as possible.

VII. Conclusion

In sum, the serious flaws of the NGPA are becoming increasingly manifest. Prices for some gas are soaring beyond any rational market clearing level, and they are likely to continue to do so, especially in light of the gas contracting practices of the pipelines. Moreover, these soaring prices are not leading to assured, reliable future gas supplies. With the demand distortions created by the Act, curtailments in the not too distant future are a distinct danger. Unfortunately, the FERC has very limited authority to deal with these problems.

The Congress should promptly reexamine and amend the NGPA. The ultimate solution to the NGPA's serious structural problems is to move forward toward deregulation of natural gas as rapidly as possible.

Please keep in mind that industrial users do not like paying higher prices for energy any more than do other consumers. However, if American industry is to compete effectively in world markets, it needs the assurance of stable energy supplies, which can be provided only by a functioning free market for energy sources. It also needs equal access to natural gas at prices that are more or less equivalent across the country, without discriminatory rate schemes, like incremental pricing, which shift disproportionate costs to industrial gas users. Unfortunately, the NGPA prevents such stability and equality, and the FERC cannot cure the statute's major flaws.

The recent example of oil decontrol amply illustrates the benefits of prompt deregulation. Only a couple of years ago, opponents of oil decontrol were saying that higher prices would have no impact on producers but would deal consumers an unbearable economic blow. Now, U.S. petroleum exploration and development are proceeding at record rates; imports of oil are falling sharply; world oil prices have fallen over several months; and, after an initial post-deregulation price jump, retail and wellhead prices have fallen back. Further, these benefits were achieved without any consumer or voter revolt, even though virtually all families and industries purchase substantial volumes of petroleum products every year. Orderly deregulation of natural gas, which is used by far fewer consumers, is likely to produce the same net economic and supply benefits.

APPENDIX A

Members of the Process Gas Consumers Group*

Aluminum Company of America

American Can Company

Anaconda Company (a subsidiary of Atlantic Richfield Company)

Armco Inc.

Bethlehem Steel Corporation

Borg-Warner Corporation

Burlington Industries, Inc.

Cone Mills Corporation

Corning Glass Works

Dan River Inc.

General Motors Corporation

3M Company

Owens-Corning Fiberglas Corporation

Owens-Illinois, Inc.

United States Steel Corporation

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*Amended February 18, 1982 for purposes of submission to the Joint Economic Committee's Subcommittee on International Trade, Finance and Security Economics.

APPENDIX B

States Served by Pipelines Identified in PGC Statement

The following is a list of states directly served by various interstate pipelines, most of which are mentioned in PGC's statement, along with an indication of the number of additional states indirectly affected through sales to other pipelines. The states served are listed in alphabetical order, and the volumes sold into each state will vary substantially. */

Algonquin Gas Transmission Company is authorized to sell gas in Connecticut, Massachusetts, New Jersey, New York, and Rhode Island.

Arkansas Louisiana Gas Company is authorized to sell gas in Arkansas, Kansas, Louisiana, Oklahoma, and Texas. Arkansas Louisiana sells gas to one other interstate pipeline which in turn is authorized to sell into two additional states.

Colorado Interstate Gas Company is authorized to sell gas in Colorado, Kansas, New Mexico, and Wyoming. Colorado Interstate Gas Company sells to eight other pipelines which in turn are authorized to sell into twenty additional states.

Consolidated Gas Supply Corporation is authorized to sell gas in New York, Ohio, Pennsylvania, Virginia and West

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*/ The listings are derived from an FERC News Release of February 13, 1981 and from recent Form 16's filed by the various pipelines.

Virginia. Consolidated Gas Supply Corporation sells gas to two other interstate pipelines which in turn are authorized to sell into seven additional states.

El Paso Natural Gas Company is authorized to sell gas in Arizona, Colorado, New Mexico, Oklahoma and Texas, and it is a major supplier of California.

Kansas-Nebraska Natural Gas Company is authorized to sell gas in Colorado, Kansas, Nebraska and Oklahoma. Kansas-Nebraska sells gas to two other interstate pipelines which in turn are authorized to sell into nine additional states.

Michigan Wisconsin Gas Pipeline Company is authorized to sell gas in Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Ohio, Oklahoma, Tennessee, Texas, and Wisconsin. Michigan Wisconsin sells gas to two other interstate pipelines which in turn are authorized to sell gas into seven additional states.

Mid-Louisiana Gas Company is authorized to sell gas in Louisiana, Mississippi and Texas.

Natural Gas Pipeline Company of America is authorized to sell gas in Arkansas, Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma and Texas. Natural Gas Pipeline Company sells gas to two other interstate pipelines which in turn are authorized to sell gas into four additional states.

Northwest Pipeline Corporation is authorized to sell gas in Colorado, Idaho, New Mexico, Oregon, Utah, Washington, and Wyoming. Northwest Pipeline Corporation sells gas to five other interstate pipelines which in turn are authorized to sell to six additional states.

Panhandle Eastern Pipeline Company is authorized to sell gas in Colorado, Illinois, Indiana, Kansas, Michigan, Missouri, Ohio, Oklahoma, Texas, and Wyoming. Panhandle Eastern sells gas to three other interstate pipelines which in turn are authorized to sell gas into nine additional states.

Southern Natural Gas Company is authorized to sell gas in Alabama, Georgia, Louisiana, Mississippi, South Carolina, and Texas. Southern Natural sells gas to three other interstate pipelines which in turn are authorized to sell gas into twelve additional states.

Tennessee Gas Pipeline Company is authorized to sell gas in Alabama, Arkansas, Connecticut, Kentucky, Louisiana, Massachusetts, Mississippi, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Texas, and West Virginia. Tennessee sells gas to fifteen other interstate pipelines which in turn are authorized to sell into ten additional states.

Texas Eastern Transmission Company is authorized to sell gas in Alabama, Arkansas, Illinois, Indiana, Kentucky, Louisiana, Maryland, Missouri, Mississippi, New Jersey, New York, Ohio, Pennsylvania, Tennessee and Texas. Texas Eastern sells gas to seven other interstate pipelines which in turn are authorized to sell into four additional states.

Texas Gas Transmission Corporation is authorized to sell gas in Arkansas, Illinois, Indiana, Kentucky, Louisiana, Ohio, Tennessee and Texas. Texas Gas Transmission sells gas to seven other interstate pipelines which in turn are authorized to sell gas into fourteen additional states.

Transcontinental Gas Pipe Line Corporation is authorized to sell gas in Alabama, Georgia, Louisiana, Maryland, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Texas and Virginia. Transcontinental sells gas to six other interstate pipelines which in turn are authorized to sell into four additional states and the District of Columbia.

Transwestern Pipeline Company is authorized to sell gas in Arizona, Kansas, New Mexico, Oklahoma, and Texas. Transwestern sells gas to one other interstate pipeline which in turn is authorized to sell into two additional states.

Trunkline Gas Company is authorized to sell gas in Arkansas, Illinois, Indiana, Kentucky, Louisiana, Mississippi, Tennessee and Texas. Trunkline sells gas to two other interstate pipelines which in turn are authorized to sell into seven additional states.

United Gas Pipe Line Company is authorized to sell gas in Alabama, Florida, Louisiana, Mississippi, and Texas. United sells gas to six other interstate pipelines which in turn are authorized to sell gas into sixteen additional states.

APPENDIX C

Excerpted from the Comments of The Process Gas Consumers Group and the American Iron and Steel Institute, filed in FERC Docket No. RM81-29

IV. COMMISSION PROPOSAL TO PERMIT OFF-SYSTEM SALES BY ONE INTERSTATE PIPELINE TO ANOTHER

In Docket No. RM81-29, the Commission has proposed to grant interstate pipelines blanket certificates authorizing them to make one-year off-system sales of up to 100,000 Mcf per day in each sale to another pipeline, at rates to be set in a separate rate case. The Commission's proposal indicates that rates would presumptively be set at the average purchase price of the seller's gas plus transportation costs. Under the proposal, pipelines would be authorized to make such off-system sales subject to interruption to mitigate curtailments of on-system customers, but no consideration is given to the selling pipeline's future gas supply, the impacts on its rates, or the balance of benefit and harm to the selling pipeline's customers. Apart from a few assertions about some pipelines' currently available supply exceeding current demand, the Commission offers no analysis of the complex issues presented and provides no foundation for its determination that it is in the public interest to facilitate such off-system sales on an across-the-board basis.

A. Relevant Factors to be Considered

If one thing is clear from the gas supply data presented at the outset of these comments, from the wide ranging side effects identified at the June 5 hearing, and from the sheer diversity of opinions expressed on the off-system sales issue at that hearing, it is that this issue is far too complex to be addressed on the simplistic, blanket basis proposed in Docket No. RM81-29. In considering off-system sales proposals, three major interrelated factors must be considered and balanced: (1) the selling pipeline's future supply outlook and need to build its reserve margins; (2) the rate impact on the seller's on-system customers which are required to subsidize off-system sales made at average costs; and (3) the distortion of gas supply markets as certain pipelines are enabled, indeed encouraged, to keep bidding up the price and non-price (*e.g.*, take-or-pay and redetermination) terms to unreasonable levels beyond the reach of most potential buyers. Unfortunately, these factors are nowhere addressed by the Commission's proposal.

1. Gas Supply.

First, in view of declining reserves and the expected drop in natural gas production, the Commission should be devoting its attention primarily to rebuilding reserve margins in order to mitigate future shortages rather than devoting its attention to trying to accelerate consumption of gas in the short-term. Historically, the Commission required pipelines to maintain 12 years of deliverability from proved reserves equal to certificated requirements before permitting new sales. That restriction was relaxed in the 1960's, however, and the severe shortages and curtailments of the 1970's resulted. Now, gas pipelines have deliverability lives of 0-2 years and the Commission is worried about a gas "surplus."

If the Commission continues on the path reflected in this proposal of trying to accelerate the exhaustion of the current excess of deliverability, the inevitable and widely predicted result will be the exacerbation of curtailments in the future. The Commission will not, as it appears mistakenly to believe, achieve a balanced market by accelerating short-term deliveries. Instead, it will merely accelerate the timing and the depth of the upcoming imbalance of gas demand and supply. That is, gas consumed in the short-term will simply mean less gas available to offset future shortages and, thus, greater future economic and social hardships. The Commission, therefore, should focus its analysis of this proposal on avoiding future consumer hardhips from gas shortages.

Second, the available evidence indicates that off-system sales help the long-term supplies only of some pipelines. Because of the variations in their current mix of supplies, not all pipelines are able or willing to keep bidding up the high Section 107 gas prices or the high take-or-pay terms in new gas contracts. These companies are not helped by an off-system sales policy that enables a few buyers to agree to high purchase price and high take-or-pay terms because they can make off-system sales at average prices.

2. Rate Impacts.

The evidence available clearly shows that off-system sales made at average prices require substantial subsidization by pipelines' on-system customers. Inasmuch as deregulated Section 107 gas is reported to be getting prices as high as 110% of No. 2 fuel oil in New York (i.e., currently over $8 an Mcf) and imports are running $4.94 per MMBtu, an off-system sale at a pipeline's average cost of gas is subject to heavy on-system subsidization even with full revenue crediting. Thus, for example, if an interstate pipeline is purchasing gas at $8 per Mcf and selling it off-system at $3 an Mcf, it is apparent that its on-system customers are paying rates reflecting costs of $5 an Mcf for gas that they never receive. */ If the pipeline made a take-or-pay payment but delayed receipt of the gas, the on-system customers would bear the full cost of the gas in their current rates, but at least they would have a right to receive that gas in the future when they needed it. Since, under the off-system sales proposal, the on-system customers' rates would reflect costs of $5 an Mcf anyway, they might be better off paying the rates covering extra $3 and at least receive the gas in the future.

3. Distortion of Supply Markets.

The effect of off-system sales at average prices is to enable selling pipelines to continue bidding for new gas at higher prices and with less favorable take-or-pay terms in the knowledge that, regardless of what they pay, they will be able to resell it off-system at far lower, more marketable prices. While paying high field prices might be reasonable if the pipeline were merely working to meet its obligation to serve the full requirements of all of its on-system customers at the lowest possible rates, the result is less defensible in the case of purchases that primarily benefit off-system customers to whom no comparable service obligation is owed. (That the Commission itself recognizes the primary duty to on-system customers is revealed in the revenue crediting requirement which implicitly acknowledges that off-system sales should work for the benefit of on-system customers).

The distortions that are being created are most obviously evidenced by the fact that one of the simplest rules of economics is not being satisfied. That is, in the rational market, if there were an excess of supply — as the Commission here assumes — then prices should moderate. This, for ex-

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*/ This inequity would only be exacerbated if the FERC adopted certain pipelines' suggestions to abolish all revenue crediting to on-system customers. In that situation, an interstate pipeline would acquire gas and charge to its PGA $8 per Mcf, sell those volumes for $3 Mcf to third parties, and make no credit to its Account 191. As a result, it would effectively collect $11 per Mcf on gas purchased for $8 per Mcf. The pipeline's on-system customers would pay $8 (i.e. $5 more than the off-system customer) and not even receive the gas. Indeed, as compared to making a take-or-pay payment, the on-system customers would clearly be disadvantaged.

ample, is clearly happening today in the oil market, as domestic producers and world producers have started to lower their price in order to maintain sales levels. Similarly, this happened in some areas where Canadian producers were forced to moderate their take-or-pay demands when U.S. buyers encountered serious problems reselling Canadian gas purchased at the fixed border price. However, no such result is occuring in today's gas market. The off-system sales proposal only exacerbates the problem.

B. Suggested Courses of Action

Balancing these competing interests and trying to avoid the adverse side-effects that are currently resulting from the Commission's off-system sales policy requires far more careful analysis than can occur in an across-the-board rulemaking such as this off-system sales proposal. The Commission must be far more circumspect of off-system sales at average cost prices and, in any event, must look at each pipeline on the basis of the best interests of its customers and the public, over both the long- and short-term.

To accomplish this without having to examine each individual sale, PGC and AISI suggest the following procedure. Rather than promulgating a rule that automatically gives a blanket certificate for off-system sales subject to universally applicable conditions, pipelines that desire to make off-system sales should be required to apply for a "blanket certificate" adapted to its individual circumstances. In its application, the pipeline would have to show (a) the total volume it seeks authority to sell in transactions initiated during the succeeding 12 months; (b) its current and projected short- and long-term supply and demand balances (*i.e.*, in each of the upcoming 10 years); (c) the rate (or minimum rate) at which the off-system sales would be made; and (d) why it is in the best interests of the seller's customers and the public generally to make off-system sales at the price proposed rather than to husband the gas or sell it at a higher price.

On the basis of the pipeline's showing and any other evidence presented in pleadings or hearings, the Commission would issue a "blanket certificate" authorizing the pipeline to make any off-system sales it desires up to the total volume ceiling approved by the Commission and at the rate approved by the Commission. The sales would have to be interruptible and subordinate to on-system sales, and they would have to be initiated within one year of the date of the certificate and completed within one year of the date of initiation. To get renewed authorization to initiate sales, the pipeline would have to apply for a new certificate.

With respect to rates, the presumption would be in favor of making off-system sales at or near the highest prices being paid by the pipeline for new gas, and the pipeline would have the burden of proving that it is in its customers' best interest to sell gas off-system at a lower price. */ This "LIFO" (last-in-first-out) approach would have the advantage of providing maximum rate protection for gas customers served by the pipeline. It would recognize that, depending upon the magnitude of the difference between average costs and highest unit costs, the limited benefit of revenue credit from an off-system sale may be outweighed by the harm of giving up gas that is mostly paid for by on-system customers. Thus, for example, if the pipeline were to pay $8 for new gas and sell it off-system for an average cost of $3, on-system customers would be forced to pay rates covering the $5 difference yet not receive any gas. On the other hand, if the pipeline did not need the volume and the gas were sold off-system for the full $8, the customers would suffer no injury. They might well be better off paying rates reflecting the full $8 under take-or-pay clauses and retain the right to get the gas to offset future shortages.

The Commission would obviously need supply data to consider the customers' future gas needs in evaluating the relative costs and benefits. If, for example, system curtailments were expected within a few years, the pipeline's customers would clearly benefit from building the pipeline's reserves (i.e., husbanding the gas) even if that meant incurring some current costs analogous to storage costs.

The important feature of the approach suggested by PGC and AISI is that the Commission would be able to take a

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*/ PGC and AISI distinguish sharply between on-system and off-system sales. Average cost ratemaking is the only clearly reasonable and non-discriminatory approach to on-system sales in view of pipeline's obligation to serve fully all of the requirements of its customers at the lowest possible rates. However, the pipeline does not owe a service obligation to potential purchasers in occassional off-system sales, which are more analogous to temporary assignments of excess gas supplies. Indeed, as indicated by the Commission's revenue crediting requirement and by its concern that on-system customers not subsidize such sales, off-system sales are ostensibly made for the benefit of the selling pipeline's on-system customers to whom the primary duty of service is owed.

comprehensive look at, and then balance, the current rate and future supply interests of each pipeline and its customers. The pipeline's primary obligation to its on-system customers would be recognized, and the terms of off-system sales could be designed accordingly. At the same time, by approaching the matter in only one proceeding per pipeline, the Commission could avoid the cost of strict sale-by-sale review and get the benefit taking a comprehensive look at the pipeline's actions. */

Respectfully submitted,

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Attorneys for
The Process Gas Consumers Group
and
The American Iron and Steel Institute

June 15, 1981

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*/ With regard to Commissioner Sheldon's comments at Tr. 70-72, the leading "regulatory reform" bills pending before Congress, S.1080 and H.R. 746, would not directly affect this proposal by PGC and AISI. The individual pipeline proceedings would either be classified as adjudications or as rulemakings "of particular applicability" governing rates. Either way, they would be exempted from the coverage of those bills.

APPENDIX D

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

In the Matters of:

Columbia Gas Transmission Corporation	:	Docket No. TA81-2-21 (PGA81-2, IPR81-2, and AP81-2)
Columbia Gas Transmission Corporation	:	Docket No. TA81-1-21 (PGA81-1, IPR81-1, LFUT81-1, TT81-1 and AP81-1)

PETITION TO INTERVENE, PROTEST, AND REQUEST FOR REJECTION OR, IN THE ALTERNATIVE, FOR SUSPENSION, INVESTIGATION, AND CONSOLIDATION OF THE CITIES OF CHARLOTTESVILLE AND RICHMOND, VIRGINIA

Pursuant to Sections 1.8 1.10 and 1.12 of the Commission's Rules of Practice and Procedure and Section 13 of the Natural Gas Act, the Cities of Charlottesville and Richmond, Virginia ("Cities") hereby file in Docket No. TA81-2-21 (PGA81-2, IPR81-2, and AP81-2) this petition to intervene, protest, and request for rejection or, in the alternative, for suspension, investigation, and consolidation for hearing and decision with Docket No. TA81-1-21 (PGA81-1, IPR81-1, LFUT81-1, TT81-1, and AP81-1). In support thereof, the Cities state the following:

I.

PETITION TO INTERVENE IN PGA81-2

A. Each City is a "municipality" as defined in Section 2(3) of the Natural Gas Act.

B. Any communication with respect to this petition should be addressed to the following:

Miller, Balis & O'Neil, P.C.
776 Executive Building
1030 Fifteenth Street, N.W.
Washington, D. C. 20005

Roger C. Wiley, Esquire
City Attorney
City of Charlottesville
City Hall
Charlottesville, Virginia 22902

Jim L. Chin, Esquire
Assistant City Attorney
City of Richmond
City Attorney's Office
Richmond, Virginia 23219

C. Each City owns and operates its gas distribution system serving its respective community and purchases its supplies of natural gas for resale therein either directly (in the case of Charlottesville) or indirectly (in the case of Richmond 1/) from Columbia Gas Transmission Corporation ("Columbia") under rate schedules on file with the Federal Energy Regulatory Commission. Columbia's application for a $381,902,330 current PGA increase plus an additional $124,890,831 surcharge adjustment directly and adversely affects the Cities since it will substantially increase their cost of gas and hence, the price which they must charge their consumers.

D. The interests of the Cities are represented by no other parties to this proceeding.

II.

PROTEST AND REQUEST FOR REJECTION OR, IN THE ALTERNATIVE, FOR SUSPENSION, INVESTIGATION, AND CONSOLIDATION

A. All Rates Above The Price Of No. 6 Fuel Oil, For Section 107 Gas Must Be Rejected Or, In The Alternative, Suspended And Collected Subject To Refund And Investigation.

Columbia's PGA filing contains so-called "high-cost" natural gas under Section 107 of the Natural Gas Policy Act of 1978 ("NGPA") purchased in "first sales" from unaffiliated producers and natural gas produced by Columbia itself, which is not a "first sale" and is

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1/ Richmond purchases gas from Commonwealth Gas Pipeline Corporation which in turn purchases 70% of its gas from Columbia Gas Transmission Corporation.

instead regulated under the Natural Gas Act, but for which Columbia is nevertheless seeking to collect the ceiling price set by the Commission pursuant to Section 107 of the NGPA. For the reasons set forth below, Cities protest the collection by Columbia of the prices for which it has filed concerning this gas. In addition, as "municipalities" under Section 2(3) of the Natural Gas Act, Cities petition the Commission pursuant to Section 13 of that Act, which requires that:

> "Any State, *municipality*, or State *commission complaining of anything done or omitted to be done by any natural-gas company* in contravention of the provisions of this chapter may apply to the Commission by petition, which shall briefly state the facts, whereupon a statement of the complaint thus made *shall* be forwarded by the Commission to such natural-gas company, which *shall* be called upon to satisfy the complaint or to answer the same in writing within a reasonable time to be specified by the Commission." [Emphasis supplied.]

(1) Columbia's Earlier PGA Filing In Docket No. TA81-1-21 (PGA81-1).

In Docket No. TA81-1-21 (PGA81-1), Cities protested the inclusion in Columbia's PGA filing of 1,609,152 Mcf of Section 107 gas purchased from independent producers classified by Columbia as "Louisiana Suppliers" at a total price of $11,061,173, on an average of $6.87 per Mcf. While these Section 107 purchases accounted for only .64% of the total volume and less than 2% of the total price paid by Columbia for all of its gas purchased from "Louisiana Suppliers" as reflected in that PGA filing, Cities recognized that a pattern of purchases was developing that would result in very substantial purchases by Columbia of Section 107 gas at deregulated prices far above the market clearing or so-called "free market" price level.

In addition, Columbia's PGA filing in Docket No. TA81-1-21 (PGA81-1) included 467,267 Mcf of Columbia's own pipeline production at a total price of $2,554,328, which reflected an average Section 107 price of $5.47 per Mcf, even though this gas is subject to regulation under the Natural Gas Act's "just and reasonable" standard. Thus, pipeline production at Section 107 prices accounted for 8.75% of the volume and 19.69% of the cost of Columbia's total pipeline production in that PGA filing.

In Docket No. TA81-1-21 (PGA81-1), Columbia's average cost of gas purchaed from Louisiana Suppliers was $2.21 per Mcf, and from Appalachian Suppliers was $2.08 per Mcf, and its average price charged for its own pipeline production was $2.43 per Mcf. The pipeline production average price for all Mcfs was increased by 29.13¢ because of gas which Columbia chose to include at Section 107 price levels. Consequently, Columbia's customers were asked to supply Columbia with $99,420,570 as a current PGA increase and $18,889,143 as a surcharge adjustment.

Cities sought rejection of the exorbitant prices for Section 107 purchases or, in the alterantive, suspension and investigation of these Section 107 prices in Cities' pleading of February 17, 1981 in that earlier PGA proceeding. By orders of February 28 and April 30, 1981, the Commission suspended Columbia's prior PGA filing and set the matter for full evidentiary hearing. A hearing is scheduled to commence on February 2, 1982.

(2) Columbia's Present PGA Filing In Docket No. TA81-2-21 (PGA81-2).

Unfortunately for Cities and their consumers, the pattern of Section 107 purchases by Columbia has developed at a most rapid pace resulting in a mind boggling request by Columbia for an increase in its very next PGA filing in Docket No. TA81-2-21 (PGA81-2) of over one half billion dollars, composed of a current PGA increase of $381.9 million and a surcharge of $124.9 million, or 57.8¢ per Mcf and 18.92¢ per Mcf, respectively. Columbia's prices for gas have risen dramatically in just six months as shown below:

	PGA81-2	PGA81-1	Increase
Louisiana Suppliers	304.63¢/Mcf	221.12¢/Mcf	83.51¢/Mcf
Appalachian Suppliers	237.37¢/Mcf	208.51¢/Mcf	28.86¢/Mcf
Pipeline Production	273.58¢/Mcf	242.97¢/Mcf	30.61¢/Mcf

These increases are exorbitant, and by any objective definition, Columbia's Section 107 gas purchase prices from its Louisiana and Appalachian Suppliers amount to "fraud, abuse, or similar grounds" under Section 601(c) of the NGPA, and its pricing of its own pipeline production at Section 107 levels constitutes an egregious violation of the "just and reasonable," cost-based rate standard of Section 4 of the Natural Gas Act.

(a) Section 107 Gas Purchased From Producers.

In its present PGA filing, Columbia reflects Section 107 purchases from Louisiana Suppliers which carry a total price of more than 2200% of that contained in Columbia's last PGA filing:

	Total Volume	Total Price	Average Price
TA81-2	30,004,464 Dth	$244,203,441	$8.16/Dth
TA81-1	1,609,152 Mcf	$11,061,173	$6.87/Mcf

The magnitude of the increase in the average price for this Section 107 gas is really greater than that shown above because the prior PGA filing was in Mcfs, while the present filing includes Section 107 purchases only in Dekatherms. Hence, a conversion to Mcfs would result in an average price greater than $8.16/Dth. Also, the total volume and price of Section 107 gas is understated by Columbia's filing because 1,933,280 Dth of gas for which Section 107 applications have been filed are included at approximately the Section 102 price level, averaging $3.07 per Dth. Columbia intends to charge its customers Section 107 deregulated prices retroactively for this gas once the wells in question qualify under Section 107.

In addition to the tremendous increase in volume, total cost, and average cost of Columbia's Section 107 purchases from its Louisiana Suppliers (Section 107 purchases now constitute 10.84% of the volume purchased and 29.93% of the total price paid by Columbia to its Louisiana Suppliers), Columbia has sharply increased the maximum amount paid for Section 107 gas. In the previous PGA filing, the highest price paid by Columbia was $7.23 per Mcf, but the present filing includes purchases at prices as high as $8.95 per Dth (i.e., over $9 per Mcf), and the average Section 107 price for purchases from Louisiana Suppliers is $8.16 per Dth.

Moreover, for the first time, purchases from Appalachian Suppliers at Section 107 prices appear in Columbia's TA81-2-21 (PGA81-2) filing. This filing contains 201,094 Dth at a total price of $1,025,574.

(b) Columbia's Actions In Purchasing Section 107 Gas From Producers Constitute "Fraud, Abuse, Or Similar Grounds."

Since there are no industrial customers on the Columbia system that would be willing to pay $8.16 per Dth, the only way in which the producer-seller can command such a price is through the practice of rolled-in pricing by Columbia. The Cities are not here protesting the use by Columbia of rolled-in pricing; however, we are opposing the inconsistent concepts of deregulation of the producers' price to the pipeline, ostensibly to permit the "market clearing" price level to be reached, while totally disregarding the market clearing price because of rolled-in pricing.

Certainly, Columbia has not actually bargained with the producers over the price since (1) Columbia believes it can automatically pass along any and all prices through its PGA, (2) Columbia has affiliated production and production of its own, whose prices are judged by how much the pipeline agrees to pay independent producers, and (3) the producers hold such an advantage in bargaining position as to make each agreement virtually an adhesion contract. 1/ Thus, the market clearing mechanism will not be present to limit the price agreed to by the pipeline unless the maximum price of gas that end users served directly or indirectly by the pipeline are willing to pay is utilized to create a ceiling for passthrough purposes. 2/

1/ *See* Brokers Title Co. v. St. Paul Fire & Marine Insurance Co., 610 F.2d 1174, 1179 (3d Cir. 1979); Standard Oil Co. of Calif. v. Perkins, 347 F.2d 379, 383 n.5 (9th Cir. 1965).

2/ The imposition of such a passthrough ceiling does not represent regulation of sales prices by the Commission, but instead serves to carry out the purpose of Sections 107 and 601(c) to permit the charging and passthrough of prices which would occur in a deregulated, competitive market. Hence, since the market clearing price, by definition, is the appropriate measure of the maximum price that could be paid under Section 107, any price paid above that level is excessive and clearly constitutes a "fraud or abuse" of Section 107 requiring denial of passthrough under Section 601(c).

This obviously could be accomplished through marginal cost pricing to low priority industrial end users, but it can also be accomplished even with the continued use of rolled-in pricing. The Commission itself has determined that the ceiling on incremental pricing to end users should be established at no higher than the price level of high-sulphur No. 6 fuel oil to prevent industrial users from switching from natural gas to oil. 1/ The average of the high-sulphur No. 6 fuel oil prices for the 48 contiguous states determined by the Energy Information Administration and published by the Commission for August, 1981, is $3.65 per MMBtu. Since the Commission has already found this price level to be the market clearing price beyond which fuel switching will occur, a pipeline should not be permitted to pay a price for incremental supplies of natural gas that exceeds the price end users will pay for that fuel, i.e., the high-sulphur No. 6 fuel oil price. However, since the $3.65 incremental price ceiling represents the delivered price to the end user, the cost of transporting and distributing the gas must be subtracted from this price to determine the maximum price a pipeline may pay a producer without abusing the automatic PGA passthrough mechanism. Using a very conservative figure of $.75 per Mcf for transportation and distribution costs, the maximum price for any purchase made by Colubmia which may be included in its PGA filing is in the neighborhood of $2.90 per Mcf.

Furthermore, when it is recognized that the high sulphur No. 6 fuel oil price of $3.65 is not a price established in a competitive market, but instead is strongly influenced, if not controlled, by the OPEC cartel, it is obvious that purchases by columbia at prices as high as $8.95 per Dth, and averaging $8.16 per Dth, are far in excess of any price that may be properly passed through to Columbia's customers under Section 601(c) of the NGPA. Plainly, Columbia's payment of these outrageous amounts constitutes "fraud, abuse, or similar grounds" prohibited by the NGPA, and consequently, Columbia must be prohibited from recovering that portion of the high-cost gas prices above $2.90 per Mcf through its PGA.

1/ Order No. 167, Docket No. RM81-27 (July 24, 1981).

At a time when there is no current shortage of natural gas, when domestic pipelines are attempting to reduce their purchase of "expensive" $4.94 Canadian gas, when demand for natural gas is soft, and when elimination of the "gas bubble" is a concern of the gas industry, it is truly difficult to perceive why Columbia is contracting for gas at prices as high as $8.95 per Dth. Surely, Columbia could have found less expensive gas supplies to purchase; it has presented no proof to the contrary.

That Columbia is paying far too much for its Section 107 gas supply can be seen by observing both the oil and gas markets. While Columbia has filed for a PGA increase of approximately 77¢ per Mcf (i.e., 57.81¢ current PGA and 18.92¢ surcharge), 1/ which raises its commodity rate to 288.21¢ per Mcf 2/ and reflects an 84.91¢ per Mcf increase to 304.63¢ per Mcf for purchases from Louisiana Suppliers, the price of No. 6 fuel oil has been *decreasing*, with the average delivered price for the 48 contiguous states dropping from $3.95 per MMBtu in February, 1981, to $3.65 per MMBtu in August, 1981. When transportation and distribution costs are subtracted from this current average No. 6 fuel oil price, the resulting price of $2.90 per MMBtu is close to Columbia's $2.8821 *commodity* rate per Mcf, which *does not* include the effect of the demand charge of $3.05 per Mcf in computing Columbia's base average rate of purchased gas cost. 3/ This sharp increase in Columbia's purchased gas cost when No. 6 fuel oil prices are decreasing, or at least stabilizing, not only reveals the questionableness of Columbia's Section 107 gas purchases, but raises the very real problem that distributors, in a time when the gas market is already soft, will lose existing industrial end users to No. 6 fuel oil.

1/ *See* Seventy-third Revised Sheet No. 16 and Twenty-first Revised Sheet No. 16A of Columbia's FERC Gas Tariff Original Volume No. 1, included in its PGA filing.

2/ *See* Eighteenth Revised Sheet No. 64 of Columbia's FERC Gas Tariff Original Volume No. 1, included in its PGA filing.

3/ *Id.*

Columbia appears to be oblivious to the realities of the marketplace, both as to how high a price residential and small commercial users are able to bear and as to how high a price industrial users are willing to bear before they switch to No. 6 fuel oil as an alternate fuel. This is yet one more manifestation that Columbia's conduct constitutes fraud, abuse, or similar grounds.

Further evidence of fraud, abuse, or similar grounds is found in Columbia's attempts to sell significant volumes of excess gas off-system. For example, in Docket No. CP81-396-000, Columbia has requested authorization to sell 200,000 Mcf per day and up to 20,000,000 Mcf total to West Lake Arthur Distribution Company, and in Docket No. CP81-376-000, Columbia seeks approval to sell 20,000 Dth per day to Eastern Shore Natural Gas Company. In both sales, the price would be the higher of the rate under a particular Columbia rate schedule or the Section 102 price. In either event, the price would be $5 to $6 per Mcf less than the price Columbia is paying for Section 107 gas. Thus, Columbia is purchasing incremental gas supply in the $8 to $9 per Mcf range, but wishes to sell this gas off system at around $3 per Mcf. As a result, Columbia's customers will be subsidizing Columbia's off-system sales to the tune of $5 to $6 per Mcf.

That Columbia seeks to make these off-system sales at prices far below the prices it is paying for Section 107 gas is an admission by the pipeline that it cannot market its Section 107 gas at the prices it is paying for this gas. For Columbia to make Section 107 purchases at prices greatly in excess of the market-clearing level --which by definition would serve as the maximum price in a competitive, deregulated market -- and then to attempt to have its customers subsidize the difference between Columbia's purchase prices and its much lower off-system sales prices constitutes a fraud, abuse, or similar grounds by Columbia against its customers and the consumers they serve.

Perhaps Columbia has agreed to pay an additional amount for the deregulated gas as consideration for the sale to it of natural gas which is not deregulated. If this is so, it would not only constitute fraud, abuse, or similar grounds, but would violate both the maximum lawful price ceilings established by Congress for the other Title I categories of gas and the express prohibition against such action contained in Section 270.207 of the Commission's Regulations.

A rejection of the deregulated gas prices paid to producers by Columbia and a thorough Staff investigation of these transactions are required. With no market for the resale of such gas at anywhere near this price level, the Commission must not permit the passthrough to Columbia's customers of any gas cost above the market clearing price, which the Commission has established at the level of high-sulphur No. 6 fuel oil, less the cost of transporting and distributing gas to the end user.

(c) The Magnitude of The Surcharge Adjustment Filed For By Columbia Provides Further Evidence Of "Fraud, Abuse, Or Similar Grounds."

The Commission should also investigate the extremely large Surcharge Adjustment of $124,890,831, or 18.92¢ per Mcf, contained in Columbia's PGA81-2 filing, as it provides yet further evidence of fraud, abuse, or similar grounds by Columbia. The purpose of Columbia's Surcharge Adjustment is to recover its deferred purchase gas balance as of June 30, 1981, i.e., through four months of the six-month period covered by PGA81-1. The size of the present Surcharge Adjustment raises significant questions as to whether Columbia has purchased substantial amounts of Section 107 gas in lieu of other lower-cost gas that it had earlier represented to the Commission that it expected to purchase.

Columbia's entire current PGA adjustment in PGA81-1 was "only" $99,420,570. But to compensate for undercollection from that previous PGA adjustment, Columbia is seeking a $124,890,831 surcharge, which is 26% greater than the PGA81-1 current adjustment and which serves to more than double the actual cost to consumers of the PGA81-1 period. A full investigation of this matter is required.

(d) Pipeline Production Gas Priced As If It Were Section 107 Gas.

[1] The area of gas pricing which provides perhaps the greatest opportunity for unlawful activity by a pipeline is the pricing of its own production. The pipeline determines the prices itself and then attempts to automatically pass them through in its PGA filing.

A review of the information contained under the "Pipeline Production" tab of Columbia's PGA81-2 filing reveals that Columbia included a greatly disproportionate amount of gas at Section 107 prices. Columbia's PGA filing contains no fewer than 62 separate entries of "high-cost" gas for which a Section 107 price is claimed. According to Columbia's projections, the volume of this "high-cost" gas for the six-month period March through August, 1981, will be 530,280 Mcf, or 594,924 Dth, at a total price of $3,034,120, which means that the average price Columbia seeks to charge its customers for this gas is $5.72 per Mcf.

Not only is the price sought for this "high-cost" gas astronomical, but this gas comprises 12.95% of the total volume of 4,093,900 Mcf of pipeline production projected by Columbia, and the total price accounts for 27.09% of the total revenue of $11,200,196 which Columbia seeks to collect from its customers. Without question, this "high-cost" gas accounts for too great a percentage of both the volume and the price of Columbia's own production.

The impact of this claimed "high-cost" pipeline production is very substantial. When this gas is removed from Columbia's pipeline production computation, the average price of the pipeline production is reduced by 44.43¢ per Mcf, from $2.7358 down to $2.2915 per Mcf.

[2] It appears from Columbia's PGA filing that these "high-cost" gas prices averaging $5.72 per Mcf, were obtained by utilizing the Section 107(c)(5) maximum price set by the Commission in Order No. 99 for "tight sands" gas of 200% of the Section 103 price and adjusting that Section 107(c)(5) price, in many cases substantially upward, for Btu content (which accounts for the significant difference between the per Mcf price of $5.72 and the per Dth price of $5.10 for this gas). As shown above, the result has been to artificially balloon by 44.43¢ per Mcf the price claimed for every Mcf of gas produced by Columbia, and constitutes not only a shocking misuse of the PGA mechanism, but a violation of the "just and reasonable" rate standard, which continues to be mandated for all of Columbia's pipeline production under Section 4 of the Natural Gas Act.

[a] The discussion in Part II.A.(2)(b) above concerning the absolute maximum price for Section 107 passthrough being the price of high sulphur No. 6 fuel oil, less transportation and distribution costs, currently about $2.90 per Mcf, is equally applicable here.

[b] Assuming arguendo for the moment that pipeline production under the "just and reasonable" standard of the Natural Gas Act may receive a Section 107 or any other NGPA price, the disproportionate percentage of "high-cost" gas being explored for and produced by Columbia evidences that the fear voiced by the Commission in Order No. 99, which established the 200% of the Section 103 price for "tight sands" gas, has come true in Columbia's case. Columbia has obviously directed a good deal of its recent exploration and development efforts toward exotic Section 107 gas because of the price it thinks it can obtain, at the expense of searching for and producing Section 102 and 103 gas.

Already 12.95% of its total pipeline production is claimed to be "high-cost" gas, and when the "old" Section 104 and Section 108 volumes are subtracted out, this "high-cost" gas represents 28.13% of the new gas being produced by Columbia. 1/ As the Commission has expressly recognized, this effort toward finding "high-cost" gas rather than Section 102 and 103 gas is contrary to the intent of Congress in enacting the NGPA:

> "In establishing prices for high-cost gas, the Commission must be sensitive not to undermine Congress's overall pricing scheme. Section 107(c)(5) prices must not create perverse incentives but must be in harmony with the overall Congressional scheme." 2/

Columbia must not be permitted to profit from the "perverse incentives" it has sought to obtain through the pricing of its pipeline production in this proceeding.

1/ 530,280 Mcf of Section 107 gas divided by 1,884,846 Mcf of Section 102, 103, and 107 gas.

2/ Order No. 99, Docket No. RM79-76 (August 15, 1980), mimeo. at 18.

[c] Order No. 99 did attempt to limit the application of the Section 107 price by requiring a negotiated contract price permitting its collection, and by reiterating throughout the order that the Section 107 price was a maximum ceiling price, and not automatically obtainable:

> "A final point of emphasis on the issue of prices for tight formation gas is that the Commission by this rule is establishing ceiling prices only. A producer of tight formation gas does not have authority to charge these ceiling prices unless the producer has the requisite contractual authority." 1/

* * *

> "The Commission... must limit the availability of the incentive price ceiling to contracts which specifically refer to it... because its pricing authority is limited to setting incentive prices 'necessary' to encourage additional production....
>
> "The Commission believes that the price ceiling if applied to all tight formation gas may operate as a windfall to sellers rather than an incentive to increase production of tight formation gas." 2/

However, this limitation does not apply to Columbia since, as the producer of its own gas, it has no negotiated contracts permitting any of the gas to receive the Section 107 ceiling price. As a result, Columbia has determined to price all of its "high cost" gas at the ceiling level, thereby resulting in "a windfall to sellers rather than an incentive to increase production."

[d] It is anticipated that as justification for the above, Columbia will point to Order No. 98, 3/ in which the Commission admitted that pipeline production is subject to the Natural Gas Act's

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1/ *Id.*, mimeo. at 30.
2/ *Id.*, mimeo. at 37.
3/ Issued on August 14, 1980, in Docket No. RM80-6.

"just and reasonable" standard and not to the NGPA, but nevertheless stated that it would permit the pipelines to collect all of the NGPA "first sale" ceiling rates anyway, including Section 107, in the interest of achieving "parity" between producer and pipeline prices for their respective production. Since the negotiated contract standard could not apply to pipeline production, the Commission devised Section 154.42(b)(1)(ii) of its Regulations, limiting pipelines to "[t]he amount paid in comparable sales... between persons not affiliated with such interstate pipeline or with each other."

Even if Order No. 98 and Section 154.42(b)(1)(ii) were not unlawful on their face as per se violations of the "just and reasonable" standard of the Natural Gas Act (discussed below), Columbia has not met this "comparability" test in attempting to collect $5.72 per Mcf for 12.95% of its pipeline produced gas. Since no producer sale should be at a price exceeding the high sulphur No. 6 fuel oil price, less transportation and distribution costs, then Columbia's own production is equally limited so as not to exceed the price of "comparable" independent producer sales.

[e] But even more fundamentally, the Commission simply is forbidden from permitting a pipeline under the Natural Gas Act to charge a price in excess of the "just and reasonable" level; otherwise, there was no need for Congress to pass the NGPA if the Commission could have set these same prices under the Natural Gas Act. 1/ However, the Cities are not at this

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1/ Sections 601(b) and (c) of the NGPA are in accord with this analysis as they recognize that since the NGPA prices are not themselves just and reasonable as between the producer and the pipeline, the pipeline could not, under the Natural Gas Act automatically pass them through to its customers. Hence, Congress determined that these prices "shall be deemed to be just and reasonable" under Section 601(b) so that they may be passed through under Section 601(c). This is also borne out by the fact that among those prices deemed just and reasonable for passthrough are Section 302 emergency sales, Section 311 intrastate pipeline sales, and Section 312 intrastate pipeline assignments, which prices are obviously not themselves just and reasonable.

time questioning Columbia's collection for pipeline production of any Title I prices established by Congress; the instant challenge applies only to the collection of a price for "high cost" Section 107 gas which has been established by the Commission in its discretion or which is deregulated.

The "just and reasonable" standard applied by the United States Supreme Court 1/ and all courts of appeals 2/ requires that a rate be cost-based even though non-cost factors may be considered. To the extent that Section 107 gas has been deregulated under Section 121 of the NGPA, the unregulated price obviously does not comport with the regulated "just and reasonable" Natural Gas Act rate. And to the extent that the Commission has decided to permit the collection of 200% of the Section 103 price under Section 107, this rate is also not cost-based and bears no relationship to the just and reasonable standard.

Under Section 107, Congress expressly determined to abandon the cost-based, just and reasonable standard. As the "Joint Explanatory Statement of the Committee on Conference" declares in discussing the prices that may be set by the Commission under Section 107 for "high-cost" gas, such as that from tight formations:

1/ *See, e.g.,* Federal Power Commission v. Texaco, Inc., 417 U.S. 380, 397-99 (1974) ("Congress could not have assumed that 'just and reasonable' rates could conclusively be determined by reference to market price.")

2/ *See, e.g.,* Shell Oil Co. v. FPC, 520 2d 1061, 1083-84 (5th Cir. 1975), *cert. denied sub nom.,* California Co. v. FPC, 426 U.S. 941 (1976) ("Fixing a 'just and reasonable' rate for a product sold in an inherently uncompetitive market requires more than mere subservience to national and international market forces."); Consumer Federation of America v. FPC, 169 U.S. App. D.C. 116, 515 F.2d 347, 357, *cert. denied*, 423 U.S. 906 (1975) ("Even if the producers charged the interstate pipelines no more than they charged other bidders in the unregulated intrastate market, *Texaco* took occasion to 'stress that in our view the prevailing price in the market place cannot be the final measure of "just and reasonable" rates mandated by the Act.'")

> "Such special ceiling prices are not intended by the conferees to be cost-based in nature, and do not reuqire cost justification." 1/

Moreover, the charging by Columbia of a $5.72 per Mcf price for gas which substantially exceeds the price at which Columbia can market this gas certainly violates the "just and reasonable" standard of the Natural Gas Act.

Consequently, Columbia is simply prohibited by the Natural Gas Act from charging and collecting a price under Section 107 for its own production.

[f] As if Columbia were not attempting to collect enough by charging its customers a base rate that is 200% of the Section 103 price -- so that Columbia will have the non-cost-based incentive to explore for and produce "high-cost" gas rather than additional Section 102 and Section 103 gas -- Columbia has also added on significant Btu adjustments to its pipeline produced "high-cost" gas. As discussed above, this accounts for the 62¢ per Mcf difference between the $5.72 per Mcf and $5.10 per Dth average prices for this gas.

First, Columbia's customers are to bear a non-cost price, which is far above the market clearing level. Then, this inflated price is to be used as the basis for a substantial non-cost adjustment for Btu content, even though the cost of production does not vary, and certainly does not increase dramatically because of the Btu content. Clearly, no Btu adjustment is warranted on the basis of cost.

The non-cost reason for generally permitting a Btu adjustment is that higher Btu gas is of more value to the purchaser. Although this is true, because the Section 107 gas, which is of no more value to the consumer than Section 102 gas, already has a base price far above its value to the consumer -- in fact, no consumer would even purchase the gas at that price -- no upward adjustment of the Section 107 price for value to the consumer resulting from additional Btu content is proper, or just and reasonable.

1/ Joint Statement at 88.

[g] To the extent any Btu adjustment is permitted for any of Columbia's own production and for its purchases as well, Columbia must be required to verify by substantial evidence, as part of a thorough Commission Staff investigation, the correctness of the Btu content it claims for its gas supply.

B. All Rate Increases Based Upon Area Rate Clauses In Gas Purchase Contracts Must Be Rejected Or, In The Alternative, Suspended And Collected Subject To Refund.

Although Columbia's PGA filing does not contain sufficient information to calculate the precise percentages of the proposed rate increase and of past PGA rate increases which are attributable to Columbia's attempted utilization of area rate clauses in its contracts with producers -- including its own affiliate, Columbia Gas Development Corporation -- as the basis for collecting the significantly higher ceiling rates of Title I of the NGPA, there is no question from the data which is provided that Columbia's incorrect interpretation of these area rate clauses accounts for a substantial portion of the PGA rate increase sought by Columbia.

The issue of whether area rate clauses may properly be interpreted to include authority for the collection of NGPA maximum lawful prices is involved in Docket No. RM79-22 and Docket Nos. RI74-188, *et al.* Cities object strenuously to the imposition of NGPA ceiling prices for new or flowing gas on the basis of the convoluted interpretation of area rate clauses espoused by Columbia and set forth in the Order No. 23 series and Opinion No. 77. The third-party protests filed in *Columbia Gas Transmission Corporation*, Docket No. GP80-11, have challenged each of the contracts whose language does not include the authority for the collection of any NGPA rates required by Section 101(b)(9) of that Act. Cities submit that the highest rate that can be properly charged for gas under the protested area rate clauses is the applicable just and reasonable area or national rate set under Sections 4 and 5 of the Natural Gas Act. Rates above that level are unlawful and must be rejected. However, if the Commission permits these rates to be collected, their collection must be subject to refund.

C. If That Portion Of Columbia's PGA Filing Containing Section 107 Gas Purchase Costs Above The Delivered Price Of No. 6 Fuel Oil Minus The Cost Of Transportation And Distribution Is Not Rejected By The Commission, Then This PGA81-2 Proceeding Should Be Consolidated For Hearing And Decision With PGA81-1.

Columbia's filing in Docket No. TA81-1-21 (PGA81-1) has already been suspended and set for hearing on the Section 107 issues to commence on February 2, 1982, on the basis of Cities' protest in that proceeding. As the protesting party in PGA81-1, Cities state that their instant protest of Columbia's filing in PGA81-2, while requiring rejection since that filing is even more egregious than PGA81-1, raises the same basic issues and relies on the same type of evidence as is involved in the PGA81-1 proceeding.

Since there is an identity of issues and evidence and since the hearing in PGA81-1 will not begin until five and one-half months from now, no delay in the earlier PGA case will be necessary if the two proceedings are consolidated for hearing and decision. On the other hand, seriatim hearings on this recurring issue would be inefficient, duplicative, and unnecessarily costly both to the Commission and to the parties. Moreover, the inclusion in the same hearing of both PGA filings spanning one year will present to the Commission a better record on whether a pattern of activity by Columbia has developed which constitutes fraud, abuse, or similar grounds.

Thus, if the Commission determines not to reject that portion of Columbia's PGA81-2 filing containing Section 107 gas purchase costs above the delivered price of No. 6 fuel oil minus the cost of transportation and distribution, then the Commission should suspend and investigate PGA81-2 and consolidate this proceeding with PGA81-1 for hearing and decision.

WHEREFORE, Cities respectfully request

(1) that for good cause shown, they be permitted to intervene as parties in Docket No. TA81-2-21 (PGA81-2) with all rights appropriate to that status:

(2)(a) that Columbia's PGA filing in Docket No. TA81-2-21 (PGA81-2) be rejected to the extent it includes any purchases from producers or any pipeline production denominated as Section 107 or "high-cost" gas, and Columbia be limited to collecting from its customers for this gas the price of high-sulphur No. 6 fuel oil, which for August, 1981, was $3.65, less the cost of transporting and distributing the gas to the end user; or, in the alternative,

(b)(i) that Columbia's PGA filing in Docket No. TA81-2-21 (PGA81-2) concerning Section 107 gas be suspended and collected subject to refund pending a complete Staff investigation and an evidentiary hearing pursuant to Section 601(c) of the NGPA and Sections 4, 5, 7, 8, 13, 14, 15, and 16 of the Natural Gas Act at which Columbia must prove, inter alia, [a] that its "high-cost" purchases from producers and its "high-cost" pipeline production are at the lowest possible prices; [b] that it could not instead have obtained other less expensive supplies of natural gas; [c] that it has not devoted an inordinate amount of its own exploration and production effort to "high-cost" gas; [d] that the Btu content reported for each of its gas purchases and its own gas production is correct, and [e] that its conduct does not constitute "fraud, abuse, or similar grounds" and does not violate the "just and reasonable" standard, and

(ii) that Docket No. TA81-2-21 (PGA81-2) be consolidated with Docket No. TA81-1-21 (PGA81-1) for hearing and decision; and

(3)(a) that Columbia's PGA filing herein be rejected to the extent it includes NGPA maximum lawful prices for purchases under area rate clauses; or, in the alternative,

(b) that Columbia's PGA filing herein be suspended and collected thereafter subject to refund pending determination of the illegality of the Order No. 23 series and Opinion No. 77 and/or the incorrectness of Columbia's interpretation of the area rate clauses in its contracts.

Respectfully submitted,

CITIES OF CHARLOTTESVILLE AND
RICHMOND, VIRGINIA

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August 19, 1981

VERIFICATION

DISTRICT OF COLUMBIA/ss:

Stanley W. Balis, being first duly sworn on oath deposes and says that he has read the foregoing document and knows the contents thereof, that he has been authorized to present the same on behalf of the Cities of Charlottesville and Richmond, Virginia and that the facts therein stated are true and correct as he verily believes.

Stanley W. Balis

Stanley W. Balis

Subscribed and sworn to before me this 19th day of August, 1981.

M Rafferty

Notary Public

My Commission Expires:

2/28/85

CERTIFICATE OF SERVICE

This is to certify that the foregoing document has been served this 19th day of August, 1981, on all parties of record pursuant to Section 1.17 of the Commission's Rules of Practice and Procedure.

Stanley W. Balis

Stanley W. Balis

APPENDIX E

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Transcontinental Gas) Docket No. TA81-1-
Pipeline Corporation) 29-002

NOTICE OF INTERVENTIONS, PROTEST AND MOTION FOR SUSPENSION AND HEARING OF THE PUBLIC SERVICE COMMISSION OF THE STATE OF NEW YORK AND THE NORTH CAROLINA UTILITIES COMMISSION.

The Public Service Commission of the State of New York (New York) and the North Carolina Utilities Commission (North Carolina) herewith give notice, pursuant to the provisions of Section 1.8(a) of the Commission's Rules of Practice and Procedure, of their intervention as parties in the above designated proceeding. For the reasons detailed below, New York and North Carolina are convinced that the Commission cannot find that the increased rates which would be made effective by the instant PGA filing by Transcontinental Gas Pipeline Corporation (Transco) are just and reasonable within the meaning of Sections 4 and 5 of the Natural Gas Act and Section 601(b) of the Natural Gas Policy Act (NGPA', or appropriate for pass through under Section 601(c) of the NGPA. In addition, New York and North Carolina are convinced that the controllable price escalations indicated in the instant PGA filing by Transco are so high, both absolutely and in relation to the price of various categories of oil serving as a major alternate fuel in the markets served by Transco, as to mandate a thorough investigation of Transco's gas purchase operations pursuant to Section 14 of the Natural Gas Act.

2. Correspondence and pleadings relating to the intervention and participation in the proceeding by New York should be addressed to:

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General Counsel
Empire State Plaza
Albany, New York 12223

Richard A. Solomon
Dennis Lane
Wilner & Scheiner
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Washington, D.C. 20036

3. Correspondence and pleadings relating to the intervention and participation in the proceeding by North Carolina should be addressed to:

R.J. Nery
Director, Natural Gas Division,
Public Staff
North Carolina Utilities Commission
P. O. Box 991
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Morton L. Simons
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4. The instant filing involves a PGA tracking filing proposed to be effective on March 1, 1981, which according to Transco involves a net increase of 66.6 cents per dekatherm (dt) in the commodity or delivery charge of Transco's CD, G, OG, E, PS and S-2 rates, of 66.3 cents per dt in the commodity charge of the ACQ rate schedule, and 1.2 cents per dt in the delivery charge of its X-20 rate schedule. Of the 66.6 cents increase, 65.4 cents is the result of producer price increases, with 62.3 cents representing an increase in the current purchased gas costs since the previous filing became effective on September 1, 1980 and 3.1 cents per dt reflecting an increase in the Deferred Adjustment. While the absolute level of this increase (which compares with the latest semi-annual increases for Tennessee Gas Pipeline and Texas Eastern Transmission Corp., two pipelines serving a number of the same customers as Transco, of 22.85 cents per Mcf and 17.25 cents per Mcf) would alone be sufficient in protestants' view to justify a hearing, our problems go well beyond this circumstance.

5. Thus the adjusted base cost of gas on the Transco system has risen in the last two-and-one half years from 82.5 cents per dt as of September 1, 1978, to $2.697 per dt as of March 1, 1981, an increase of $1.872 or 227%. This contrasts with an increase in gas costs during the same period for Tennessee of $1.09 or 119% and for Texas Eastern of 89 cents or 103%. Even more important, the latest increase brings the 100% load factor price for contract demand service and the charge under the General Service rate from Transco to $3.7614 for Zone 1, $3.7764 for Zone 2 and $3.8294 for Zone 3. These prices are at a level which, when distribution costs are added into the picture, 1/ bring the burner tip price of Transco gas to levels which are rapidly

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1/ Present markups for the three downstate New York customers of Transco for residential sales are Brooklyn Union, $2.22-2.41; Consolidated Edison, $2.59; and LILCO, $2.17.

approaching a price at which customers with alternate fuel capacity will switch to oil. 2/ Thus as of September 10, 1981, the price for No. 2 oil in New York City was 99.82 cents per gallon, equivalent to $7.13 per dt, and for low sulphur No. 6 residual oil, 78.8 cents per gallon, equivalent to $5.36 per dt. 3/ Similarly, the current prices for No. 6 high sulphur oil in North Carolina, where it is the principal alternate fuel, is approximately 80.55 cents per barrel at the Port of Wilmington, equating to a burner tip price of about $5.41 per dt. Moreover, even if the instant filing would not result in any substantial loss of sales to alternate fuels, it is apparent that the continued ability of Transco's customers to maintain sales to industrial and other end users with alternate fuel capacity will be seriously jeopardized if Transco's purchased gas costs, which have escalated at a steadily increasing level over the last six PGA filings from 21.5 cents for the period between September 1, 1978 and March 1, 1979 to over 59 cents in the most recent six-month period, continues to follow this pattern.

6. The problems raised by Transco's filing are by no means limited to the possibility of loss of sales where the end users have the ability to utilize alternate fuels. For the Transco filing indicates the possibility that unnecessarily high costs for gas are being imposed upon Transco's customers as a result of its gas purchasing practices over which this Commission retains supervisory control. A substantial portion of the increases which have led to the more than tripling of Transco's purchased gas costs in the last two-and-one-half years is of course due to the statutory increases in the NGPA ceiling rates. But an increasing factor in the ever accelerating increases in Transco's PGA filings has been the impact of increased purchases of very high cost Section 107 gas.

2/ The Transco rates proposed to be effective as of March 1, 1981, include increases in its rates filed in Docket No RP80-117, which are in effect, subject to refund, pending the outcome of that proceeding and also reflect a stay of the cost allocation issue litigated in Docket No. RP76-136, approved by the Court in Public Service Commission v. FERC, Case No. 79-2182 (D.C. Cir.) It is thus probable that some or all of the rates will eventually be reduced from the levels indicated in Transco's filing in this docket. But gas consumers with alternate fuel capability will frequently shift to oil whenever the effective gas rate exceeds the cost of the oil they can utilize without regard to potential refunds should the gas rates subsequently be held to be invalid.

3/ These rates had risen substantially as of February 4, 1981, in reflection of the OPEC actions and the elimination of all of United States price controls on oil, coupled with weather related increases in demand.

7. Thus, in the last two Transco PGA filings the number of Section 107 sales has increased from 76 accounting for 4.87% of the volumes and 11.32% of the total purchased gas costs with an average price of $5.13 per dt, to 93 sale accounting for 10.81% of the volumes and 22.87% of the total purchased gas costs at an average cost of $5.88. Moreover, Transco in its latest filing, lists 59 contracts, responsible for one-sixth of all of its purchased gas costs (16.27%) with current prices of from $6-$7. These include two sales by Transco's production affiliate, Transco Exploration Company, at rates of $6.93 and $6.68, respectively, the latter of which involved six month volumes of almost 9 million Mcf. There are also included, for the first time, a number of purchases made in 1980 contracts at prices in excess of $7.00, including one purchase from the McCormick 1975 Oil and Gas Fund at a presently effective rate of $7.8114.

8. Recognizing the limitations on the Commission review of such purchases imposed by Section 601 of the NGPA, it is clear that Transco has not demonstrated that its gas purchase patterns, and particularly the Section 107 gas acquired at rates in the $5-$8 per dt range, meet the standards for automatic pass through established by Section 601(c)(2) of the Act. Moreover, with respect to the purchases by Transco from Transco Exploration (or from any other affiliated producer) there has been no showing by Transco that they meet the preliminary test of Section 601(b)(1)(E) of the NGPA for determining whether they are eligible for pass through under 601(c)(2) in the absence of "fraud, abuse, or similar grounds". Thus, in the case of the sale by Transco Exploration to Transco from South Timbalier Block 148, the listed price of $6.93 is significantly higher than Transco is paying to unaffiliated producers for gas from the same block. Nor is there anything in the Transco filing from which the Commission can determine the extent to which there have been prepayments with respect to any of Transco purchases of a sort which might involve violation of any NGPA ceiling or to whether Transco's patterns of takes, as a result of unduly restrictive take-or-pay obligations or otherwise, have resulted in additional increases in the overall Transco gas costs.

9. We are convinced for the foregoing reasons that the Commission cannot find that the present filing meets the standards of either the Natural Gas Act or the NGPA, and the Commission accordingly must set the filing for hearing, suspend the effectiveness of the tariff for at least one day, and make any future collections of the increased rates subject to refund. However, the present filing clearly only reflects the tip of the cost increase iceburg Transco is obligated to reveal to collect increased rates commencing in March, 1981; no disclosure is made of the prices and estimated volumes of additional high cost gas Transco has already contracted for, or the probable effect thereof on its rates

and the marketability of the gas when such sales become fully operative. Nor are New York and North Carolina aware of any Transco policy in contracting for new gas supplies which has the objective or effect of ensuring that the overall cost of its gas will be maintained at reasonable levels in relation to that of other pipelines or will remain marketable. Thus, it is our understanding that some pipelines, in purchasing high priced or deregulated gas, have insisted upon contract provisions which would permit renegotiation where the price for the sale escalates to a level which jeopardizes continued pipeline sales or is in excess of the delivered price of some specified grade of oil or other alternate fuel in the pipeline's market area. Whether Transco has incorporated such protective clauses into its higher cost gas purchases has not been disclosed. Nor to the extent that an investigation may indicate that Transco has habitually agreed to more onerous take-or-pay provisions than its major pipeline competitors, has the necessity for such a practice been determined. Recognizing that Transco in the recent past has been in deeper curtailment than many of the other major pipelines, it does not follow that the necessary or appropriate solution to the problem is a contractual pattern which could lead to prices for Transco gas which, even on a rolled-in basis, will result in price-determined "curtailment" of service by its customers.

10. These circumstances convince New York and North Carolina that the Commission, in addition to setting the instant rate filing for hearing pursuant to Section 4 of the Natural Gas Act, should enter into an investigation of Transco's gas purchase practices and policies pursuant to its authority under Section 14 of the Natural Gas Act. Only through such an investigation can the Commission keep itself and the Congress informed as to long range issues regarding Transco's continuing viability as a pipeline able to provide gas to its customers at prices which will permit the gas to be marketed in the event alternate fuel prices fail to keep pace with Transco's indicated rate spiral. While some of the problems to which such an investigation would be directed are not unique to Transco, the abnormally large price increases it has reported in the last several years suggest that an investigation of its operations would be more productive than any such effort conducted on an industry-wide basis.

Accordingly, New York and North Carolina request that their intervention in this proceeding be noted and ask the Commission (1) to suspend Transco's PGA filing for one day, set it for hearing and require that any collection of the increased rates pending Commission decision be made subject to refund with interest, and (2) enter into an investigation of Transco's gas purchase practices pursuant to Section 14 of the Natural Gas Act.

Respectfully submitted,

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Commission of the State of
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Attorney for the North Carolina
Utilities Commission.

February 18, 1981

CERTIFICATE OF SERVICE

I. Richard A. Solomon, do hereby certify that I have served on this day, a copy of this "Notice of Interventions, Protest and Motions for Suspension and Hearing of the Public Service Commission of the State of New York and the North Carolina Utilities Commission", by first class mail, postage prepaid, to all interested parties to this proceeding.

Richard A. Solomon

February 18, 1981

APPENDIX F

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Michigan Wisconsin Pipe Line Company) Docket No. TA82-1-48-000

NOTICE OF INTERVENTION, PROTEST AND PETITION FOR SUSPENSION AND HEARING OF THE PUBLIC SERVICE COMMISSION OF WISCONSIN

The Public Service Commission of Wisconsin ("PSCW") having, among other things, the authority to regulate the rates and charges for the sale of natural gas within Wisconsin, hereby gives notice of its intervention in this docket. Additionally, the PSCW protests the Purchased Gas Adjustment ("PGA") rate filing made by Michigan Wisconsin Pipe Line Company ("Michigan Wisconsin") on October 1, 1981 and requests that the Federal Energy Regulatory Commission ("FERC") suspend the filing, require that the proposed rate increase become effective subject to refund, and set the matter for hearing.

This notice, protest, and petition for suspension and hearing is filed in accordance with sections 1.7, 1.8, and 1.10 of the FERC's Rules of Practice and Procedure and the "Notice of Proposed Changes in FERC Gas Tariff" issued on October 9, 1981.

All parties are requested to serve all documents in this proceeding upon:

Philip J. Mause
Norman A. Pedersen
Peggy Kobacker Shiffrin
Kadison, Pfaelzer, Woodard,
Quinn & Rossi
1229 Nineteenth Street, N.W.
Washington, D.C. 20036

and

Steven M. Schur
Chief Counsel
Public Service Commission of
Wisconsin
4802 Sheboygan Avenue
P.O. Box 7854
Madison, Wisconsin 53707

In its October 1, 1981, filing, Michigan Wisconsin proposed to increase the commodity charge in its two-part CD-1 rate by approximately 34.5¢ per dekatherm ("dth") to recover $224,495,040 in increased purchased gas costs. This, combined with adjustments to clear Michigan Wisconsin's unrecovered purchased gas cost account, would raise Michigan Wisconsin's commodity charge by 37.6¢ to approximately $3.82, effective November 1, 1981.

The $224 million increase in purchased gas costs reflects, in part, purchases under a large number of contracts which were classified in Michigan Wisconsin's filing as involving high cost gas which had been deregulated under Section 107 of the Natural Gas Policy Act ("NGPA"). Michigan Wisconsin's filing reflects annual purchases of more than 38 Bcf of Section 107 gas and prices as high as $8.68474 per Mcf. (Stated in terms of Btu's, prices ranged up to $9.09366 per MMBtu.)

Michigan Wisconsin's last PGA filing, Michigan Wisconsin Pipe Line Company, Docket No. TA81-2-48-000, reflected purchases of 13 Bcf of Section 107 gas and prices ranging up to $7.28 per Mcf. In protesting that filing, the PSCW stated its concern that the Section 107 gas reflected in the filing was just the "tip of the iceberg" and that a continued dramatic rise in both the price and volume of Section 107 gas could be expected. The 300% increase in the volume of Section 107 gas and the $1.40 increase in the highest price paid since Michigan Wisconsin's last PGA filing heightens PSCW's concern. PSCW notes that in Michigan Wisconsin's current PGA application, Michigan Wisconsin projects an even more dramatic increase in the volume of 107 gas in the near future.

II.

Section 601(c) of the NGPA, 15 USC §3431(c), provides that the FERC may prevent pass-through of purchased gas costs to the extent it "determines that the amount paid was excessive due to fraud, abuse, or similar grounds." The precipitous escalation in prices paid for Section 107 gas indicates the possibility that unnecessarily high gas costs are being imposed upon Michigan Wisconsin's customers as a result of gas purchasing practices over which the FERC has supervisory control. The costs of the Section 107 gas are so high and the potential impact so great that further scrutiny is imperative.

For one thing, the current supply situation suggests it may not be necessary for Michigan Wisconsin to pay gas prices as high as those reflected in this filing in order to attach sufficient reserves to meet the needs of its customers. Michigan Wisconsin has requested FERC authority to make multi-year off-system sales of natural gas at prices far below marginal acquisition costs in order to relieve surpluses. See, e.g., Michigan Wisconsin Pipe Line Co., Docket No. CP81-221.

Given the way the NGPA and the FERC's regulations are structured, there is clear potential for abuse of the PGA mechanism. An interstate pipeline such as Michigan Wisconsin lacks an economic incentive to keep prices down. Under Section 601(b)(1)(E) of the NGPA, a sale to an interstate pipeline by an affiliate of the pipeline "shall be deemed just and reasonable" if the amount paid by the pipeline "does not exceed the amount paid in comparable first sales between persons not affiliated with such interstate pipelines." Under the FERC's regulations, similar treatment is permitted for gas produced by a pipeline itself if the pipeline production had not previously been afforded cost-of-service treatment.*/ Thus, interstate pipelines which have either their own production or production affiliates stand to benefit from higher gas prices, and they have a mutuality of interest with the independent producers which sell to them.

Michigan Wisconsin has both its own production and a producer affiliate. In the October 1, 1981 filing, the prices paid by Michigan Wisconsin for its own Section 107 gas production and for production by its producer affiliate, ANR Production Company, average $7.841 per MMBtu, more than 46¢ higher than the $7.376 per MMBtu average price for all its Section 107 gas purchases included in the filing. It is incumbent on the FERC to determine that gas prices such as these paid for Michigan Wisconsin's own or affiliated production are not the result of abuse of the PGA system.

III.

The fact that Michigan Wisconsin appears to be paying higher prices for its own and affiliated production may or may not be conclusive evidence of abuse. However, the presence of such higher prices must trigger a broader inquiry into Michigan Wisconsin's gas purchasing practices, particularly with respect to its dealings with itself and with ANR Production Company. It may be, for instance, that Michigan Wisconsin, in its gas purchase contracts, with ANR Production Company, agrees to take-or-pay or marketability provisions that are more favorable to the seller than those in its contracts with non-affiliated producers. Or, it may be that in its actual purchases, Michigan Wisconsin favors its own or affiliated production.

Michigan Wisconsin's filing does not contain the information necessary for the FERC to reach a reasoned decision that the prices which Michigan Wisconsin seeks to pass through are not excessive due to abuse or similar circumstances. There is no information about Michigan Wisconsin's gas purchasing policies. There is no evidence of the factors considered in pricing affiliate production and pipeline-owned production.

Given the extremely high gas costs being proposed for pass-through in Michigan Wisconsin's filing, particularly those for affiliated or company-owned production, given the multiplicity of open questions about the incurrence of those costs, and given the lack of information required to reach a reasoned determination that the costs are not excessive due to abuse or similar circumstances, the PSCW requests that the FERC suspend the effectiveness of Michigan Wisconsin's proposed PGA increase, require that the increase become effective subject to refund, and set the matter for hearing.

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*/ 18 C.F.R. 154.42. See: Order No. 98, Pricing of Pipeline Production Under the Natural Gas Act, "Final Rule", issued August 4, 1980; reh. den., October 3, 1980.

Respectfully submitted,

Norman A. Pedersen

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COUNSEL FOR THE PUBLIC SERVICE COMMISSION OF WISCONSIN

Dated: October 21, 1981

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding in accordance with the requirements of § 1.17 of the Rules of Practice and Procedure.

Dated at Washington, D.C. this 21st day of October, 1981.

Norman A. Pedersen
Norman A. Pedersen

APPENDIX G

GAS PURCHASE AND SALES AGREEMENT

THIS AGREEMENT, made and entered into as of the 8 day of January, 1980 by and between CHEVRON U.S.A. INC., a California corporation, hereinafter referred to as "Seller", and COLUMBIA GAS TRANSMISSION CORPORATION, a Delaware corporation, hereinafter referred to as "Buyer",

WITNESSETH:

WHEREAS, Buyer desires to purchase gas from Seller in the amounts, in the manner and subject to the terms and conditions provided in this contract (which shall include the General Terms and Conditions attached hereto as Exhibit A, and all other Exhibits hereinafter referred to), and agrees to make necessary arrangements with Transporter for the receipt and transportation of the gas deliverable hereunder for the account of Buyer:

NOW THEREFORE, in consideration of the premises and the covenants set forth in this contract, the parties hereto have mutually covenanted and agreed, and do hereby mutually covenant and agree as follows:

SECTION 1. GAS RESERVES AND RESERVATIONS OF SELLER

1.1 Seller represents that it is the owner of certain interests in the oil and gas leases located in Uinta and Lincoln Counties, Wyoming, as described in Exhibit B and situated within the area outlined on Exhibit C, said exhibits being attached hereto and made a part hereof. Seller represents that its interest in the leases is not subject to any commitment of Seller in conflict with this contract and that Seller desires to sell gas to Buyer under the terms and conditions hereof.

1.2 Subject to all the terms and conditions of this contract, Seller hereby agrees to sell and deliver to Buyer, and Buyer hereby agrees to purchase and receive from Seller, fifty percent (50%) of Seller's interest (hereinafter referred to as "Buyer's Share") in gas produced and saved from the leases described in Exhibit B (as limited and described in Exhibit B) except volumes reserved by Seller in Section 1.5 hereof.

1.3 It is recognized that Seller is entering into or has entered into an agreement with another purchaser (hereinafter referred to as "Other Purchaser") providing for the sale and purchase of the other share of Seller's interest in gas produced and saved from the leases covered hereby. It will be the responsibility of Buyer and said Other Purchaser to coordinate the taking of gas from the leases so as to avoid any continuing or permanent imbalance between their obligation to take and their actual take of gas attributable to Seller's interest from said leases.

1.4 Seller will proceed with diligence in the performance of any and all acts required for delivery of the volumes of gas provided for herein by Seller to Buyer; provided, however, that nothing herein shall be construed to require Seller to produce the wells covered by this contract in a manner which would not constitute good operating practice as determined in Seller's sole discretion, nor shall Seller be obligated to deepen or rework such wells.

1.5 Seller hereby expressly reserves with respect to the leases covered by this contract the following prior rights and obligations, together with sufficient gas to satisfy the same:

1.5.1 To operate Seller's properties free from any control by Buyer in such manner as Seller, in Seller's sole discretion, may deem advisable, including without limitation the right, but never the obligation, to drill new wells, to repair and rework old wells, renew or extend, in whole or in part, any lease and to abandon any well or surrender any lease, in whole or in part, when no longer deemed by Seller to be capable of producing gas in paying quantities under normal methods of operation; provided, however, in the event Seller should terminate or surrender any lease covered hereby or any part thereof, notice shall be given to Buyer within thirty (30) days thereafter; provided, further, that Seller shall not be liable if it fails, on account of inadvertence or mistake, to give Buyer such notice.

1.5.2 To process or cause to be processed the gas covered hereby prior or subsequent to delivery to Buyer for the recovery of liquids and/or liquefiable hydrocarbons other than methane (except such minimum quantities of methane as are unavoidably removed in such processing) and non-hydrocarbon substances, including the right to use such gas for fuel in the operation of any gas processing plant, including associated transportation facilities or terminals, in which the gas is processed and the right to the shrinkage in volumes caused by the rights reserved to Seller herein; provided that in the exercise of such rights, Seller does not prevent the delivery of gas to Buyer of the quality provided for herein and does not reduce the total heating value thereof below nine hundred fifty (950) Btu's per cubic foot; provided further that the processing of gas subsequent to a point of delivery hereunder shall be in accordance with the terms and conditions as set forth in Sections 5.2 and 9 hereof. All liquids, liquifiable hydro-

BEST DOCUMENT AVAILABLE

carbons and nonhydrocarbon substances, including but not limited to sulphur and carbon dioxide, recovered shall remain the property of Seller.

1.5.3 To use from the reserves committed hereto Buyer's Share of such gas as Seller may need for developing and operating Seller's leases, including but not limited to the sale of gas to drilling contractors for the development of any leases in which Seller owns any interest, gas for fuel, gas lift, pressure maintenance, repressuring, cycling, deepening, reworking, drilling and for the operation of the treatment facilities, including associated transportation facilities or terminals which Seller may install in order to deliver gas hereunder, in accordance with the terms hereof, and to fulfill any obligation to Seller's Lessors under the terms of such leases, including, without limitation, any Lessor's right to take its royalty in kind.

1.5.4 To pool, combine and unitize Seller's leases covered hereby with other properties of Seller and of others, and to alter such pooling combination or units, in any of which events this contract will cover Buyer's Share of Seller's interest in the unit and gas attributable thereto to the extent that Seller's interest is derived from or through the leases covered hereby. Seller shall give notice to Buyer of any change contemplated by this paragraph which Seller deems material to this contract within thirty (30) days after such occurrence, provided that Seller shall not be liable if it fails on account of inadvertence or mistake to give Buyer such notice.

1.5.5 Upon written notice by Seller to Buyer of the exercise of this option, to receive gas for various of Seller's corporate uses including uses by affiliates, parents and subsidaries of Seller in a quantity not to exceed twenty-five percent (25%) of Seller's Delivery Capacity as determined in accordance with Section 2.3.2 hereof plus twenty-five percent (25%) of Buyer's Share of oil well gas. Such option may be exercised from time to time. Buyer agrees to receive the reserved gas at the point(s) of delivery hereunder for delivery to Seller at a point of exchange or as otherwise agreeable to both parties. Upon Seller's exercise of its right to receive gas for various of Seller's corporate uses reserved herein, Seller shall allocate monthly such reserved gas to either regulated gas, or deregulated gas or to both in such proportion as Seller, in its sole judgement, deems appropriate. Buyer shall seek any necessary regulatory certificate authorization from the FERC for the transportation and exchange of the reserved gas determined on a cost of service basis. Buyer shall endeavor to obtain the consent of any other pipeline(s) necessary to cause the reserved gas to be exchanged for final delivery to Seller.

1.5.6 To exchange quantities of unprocessed gas requiring treatment produced from the leases covered hereby for generally equivalent quantities of gas produced by third parties so long as the gas received by Seller in exchange is treated at a treatment and/or processing plant which handles Seller's other treated gas covered hereby and so long as Buyer's Share of such gas so received by Seller in exchange is made available to Buyer at the delivery point for treated gas in accordance with the terms, provisions and conditions of this contract. Seller shall give notice to Buyer of any change contemplated by this paragraph as soon as practible.

1.6 Seller will not sell to any other party or parties any gas committed to Buyer hereunder during the term hereof without the written consent of Buyer, except as provided in Sections 1.5.3, 1.5.5 and 2.6 hereof.

SECTION 2. QUANTITY

2.1 Subject to the provisions of this contract, commencing on the date of first delivery hereunder and thereafter, Seller will sell and deliver to Buyer, and Buyer will purchase and take from Seller, or pay for if available and not taken as herein provided, a Daily Contract Quantity consisting of a quantity of gas well gas equal to ninety percent (90%) of Seller's Delivery Capacity as determined in accordance with Section 2.3.2 hereof and averaged over each contract year.

2.2 In addition to the quantities of gas well gas set forth in this contract, Buyer shall purchase and receive, or pay for if available and not taken without right of make-up, Buyer's Share of all oil well gas tendered by Seller at mutually agreeable point(s) of delivery hereunder. Seller will give to Buyer monthly estimates of the quantity of oil well gas deliverable hereunder. Seller shall, commensurate with good production and operating practices and in accordance with proper conservation measures, so operate its wells and facilities that oil well gas to be received therefrom pursuant hereto shall be available to Buyer at as uniform rates of flow as operating conditions permit throughout each month during the term hereof.

2.3.1 The term "take or pay for quantity" shall mean a volume of gas well gas equal to the Daily Contract Quantity for a contract year less (i) such volumes of gas well gas Buyer elects not to take for failure of such gas to meet the quality specifications in Section 12.1 hereof and (ii) such volumes of gas well gas as Buyer shall have been prevented from taking by (a) cause force majeure or (b) Seller's failure or inability to deliver the volumes as provided by Section 2.5 hereof when requested by Buyer (provided, however, that Seller shall be allowed a daily variation in deliveries of five percent (5%) of the daily quantity requested by Buyer, to be balanced out during each month, to equal as nearly as is practicable the quantity requested by Buyer for such month). If during any contract year, Buyer does not take from Seller at the point(s) of delivery hereunder a volume of gas well gas equal to the take or pay for quantity, Buyer shall furnish a statement and pay Seller on or before the 60th day of the succeeding contract year for any deficiency between the quantity actually taken by Buyer during such contract year and the take or pay for quantity. The price to be paid for each MMBtu of such gas not taken shall be the price in effect at the end of the contract year during which the gas was not taken. For the purpose of such payment it shall be assumed that the ratio of regulated and deregulated gas of such gas not taken is in the same ratio as the regulated gas and deregulated gas in fact taken by Buyer during such contract year and that the Btu content of such gas not taken corresponds to the weighted average, by volume, of gas in fact taken by Buyer during such contract year. It is understood, however, that Buyer shall have the right during the succeeding five (5) years to make up such deficiency by receiving free of cost, except as otherwise provided in the next succeeding sentence, quantities of gas well gas in excess of the applicable take or pay for quantity for each of such succeeding five (5) contract years which in the aggregate shall equal such deficiency. Buyer shall pay for any differential in the price between that upon which payments were made (on a weighted average, by volume as between regulated gas and deregulated gas, basis) and that applicable at the time of taking, any adjustment between actual Btu content of the gas at the time of taking and the assumed Btu content upon which the take or pay payment was made and any applicable tax reimbursement under Section 4 hereof. The oldest deficient taking shall be the first to be made up.

2.3.2 Unless otherwise expressly agreed to by the parties hereto, commencing with the month prior to the month in which first delivery of gas hereunder is estimated to commence or the month prior to the month for which it is estimated that Buyer will commence making take or pay payments for gas not taken under the provisions of Section 8.3 hereof, whichever is the earlier, and continuing during the term of this contract, Seller shall give notice to Buyer on or before the twenty-fifth (25th) day of each month of the daily volumes of gas well gas Seller nominates to be tendered to Buyer at the points of delivery hereunder during the following month. In such notice Seller shall specify the proportion of such daily volumes which will be regulated gas the proportion thereof which will be deregulated gas, it being understood that such proportions will be identical as between the Other Purchaser and Buyer. Seller's nominated volumes shall not exceed fifty percent (50%) of Seller's Total Deliverability. Such nominated volumes shall be deemed to be Seller's Delivery Capacity for such month. Seller shall give notice to Buyer whenever it is unable to deliver any portion of Seller's Delivery Capacity for such month by reason of force majeure. If on any day Seller is unable to deliver any volume of gas well gas which it has nominated and which Buyer requests, the quantity of gas well gas actually delivered to Buyer on such day shall be Seller's Delivery Capacity for that day.

2.4 Nothing in this contract shall be construed to require Seller to produce and deliver or Buyer to purchase and receive from Seller or pay Seller for a quantity of gas in excess of Buyer's Share of Seller's interest in the total quantity of gas per day which the wells on the leases covered by this contract may produce at their respective allowable rates of flow under the applicable rules, regulations and orders of governmental authorities having jurisdiction, or in excess of the maximum efficient rate of flow as determined in Seller's sole discretion, whichever is the smaller quantity, or in any other manner which in Seller's sole opinion could cause waste.

2.5 Seller and Buyer recognize that in the performance of Seller's and Buyer's obligations under this contract and in the operation of Seller's treatment facilities, it is necessary to maintain uniform hourly rates of flow and uniform daily deliveries to the extent that such are practicable. Except in the event of force majeure, Buyer shall give, or cause to be given, to Seller at least twenty-four (24) hours advance notice of any change in excess of ten percent (10%) in the rate of delivery of gas hereunder. Subject to the foregoing, Buyer need not take gas well gas from Seller hereunder at the exact requirements specified in Section 2.1 hereunder during any definite period, provided that Buyer shall not take in any one day less than seventy-five percent (75%) of the Daily Contract Quantity provided for in accordance with Section 2.1 hereof. Seller shall maintain a delivery capacity sufficient to permit delivery to Buyer on Buyer's request of one hundred eleven percent (111%) of the Daily Contract Quantity, provided that nothing herein contained shall require Seller to incur any cost to maintain such deliverability.

2.6 If, at any time during the term hereof, the quantities of Seller's gas well gas being taken by Buyer and Other Purchaser do not permit Seller to maintain withdrawals from the reservoir(s) covered by this contract ratably with withdrawals by others from the same reservoirs, with the result that Seller's reserves are being drained thereby, Seller may make written request of Buyer and Other Purchaser to take delivery of such increased quantities of Seller's gas well gas as Seller deems necessary to offset such drainage. In the event of such written requests, and Buyer is taking less than Seller's Delivery Capacity then in effect hereunder, Buyer shall commence taking or arrange for the taking of Buyer's Share of such increased quantities within thirty (30) days after receipt of Seller's request. If Buyer does not commence taking all of Buyer's Share of such increased quantities within said thirty (30) days, Seller shall have the right to sell or otherwise dispose of Buyer's Share of sufficient quantities of Seller's gas well gas which will offset such drainage until Buyer has commenced taking Buyer's Share of such increased quantities of Seller's gas well gas which will offset such drainage.

2.7.1 Upon request by Buyer, Seller will make available to Buyer such information as Seller may possess with respect to its wells and acreage committed hereunder, including copies of any electric logs, core analyses, geological, engineering and production data, and any and all basic information in connection with such wells. Upon request by Buyer, Seller will furnish Buyer each month with copies of all production, well test, completion and recompletion reports filed by Seller or its agent with a regulatory body having jurisdiction.

2.7.2 Anything in Section 2.7.1 to the contrary notwithstanding Seller shall not be required to make available to Buyer any information or data which in Seller's sole judgment Seller considers to be confidential.

SECTION 3. PRICE

The price to be paid by Buyer to Seller for all gas delivered hereunder, or made available and not taken as herein provided, shall be as follows:

3.1 For gas produced and sold hereunder or so made available, or any portion thereof, which the United States Congress, the FERC, The President of the United States, or any governmental authority having jurisdiction in the premises exercises price control over rates that may be lawfully charged and collected (herein referred to as "regulated gas"):

(i) The price per MMBtu shall be the maximum lawful price per MMBtu, including, without limitation, applicable adjustments for (1) inflation and real growth factors, (2) taxes, and (3) any production related cost allowances or adjustments approved or allowed by the FERC, the United States Congress, The President of the United States, or other authority having jurisdiction, and prices established under the incentive pricing authority of the Natural Gas Policy Act of 1978 ('NGPA'), to which Seller may be entitled from time to time to charge and collect for the gas sold and delivered hereunder in accordance with the provisions of the NGPA, or any amendments thereto and rules or regulations of such Act, of the FERC, or other governmental authority having jurisdiction.

(ii) If the United States Congress, the FERC, The President of the United States or any governmental authority having jurisdiction in the premises acting under any section of the Natural Gas Act, NGPA, or other authority, shall at any time hereafter enact legislation, prescribe, permit, allow by law, or establish a higher national ceiling, area or other ceiling for rates and charges than the price herein provided to be paid for gas (including gas of any and all vintaging classifications) and that is applicable to the gas produced from Seller's leases, including any incentive prices established pursuant to Section 107 of the NGPA, then the price provided under this contract to be paid by Buyer to Seller for all such gas delivered, or for which payment is due under the provisions of this contract, shall be increased to equal such higher ceiling rate (including adjustments to such higher rate), effective on the date such higher rate is prescribed, permitted or established. Adjustments to such higher rate shall include but not be limited to periodic rate increases; state or federal production, severance, or similar taxes and ad valorem taxes where based on production factors; upward and downward Btu adjustment; gathering, deeper drilling and water depth allowances; biennial or other reviews; adjustments based on other fuels; adjustments based on incentive pricing, and any other permissible adjustments. As often as the price for all or part of the gas subject to the Agreement shall increase pursuant to this governmental ceiling rate provision, such increased price shall be the price for regulated gas under this Agreement.

3.2.1 For the gas produced and sold hereunder or so made available, or any portion thereof, which the United States Congress, the FERC, The President of the United States, or any governmental authority having jurisdiction in the premises, ceases or has already ceased to have jurisdiction or exercise control over rates that may be lawfully charged and collected (herein referred to as "deregulated gas"):

(i) The initial price shall be $6.40 per MMBtu effective December 19, 1980 which price computed to the nearest one-thousandth of a dollar shall be the minimum price and shall be increased on the first day of each month thereafter at a rate which is the higher of the alternatives provided below:

(1) the change in the Consumer Price Index for all Urban Consumers published by the U. S. Department of Labor, Bureau of Labor Statistics. Such increase shall be determined by multiplying the price in effect during the immediately preceding month by a ratio, the numerator of which is the index for the most recent month available, and the denominator of which is the index for the month preceding that used for the numerator; or

(2) one (1) percent above the price in effect during the immediately preceding calendar month.

(ii) The initial price provided in Section 3.2.1 (i) above shall be redetermined using the below criteria within one hundred and thirty-five (135) days beginning on the first day of the month during which Seller submits the initial nominations of gas well gas pursuant to Section 2.3.2 hereof and such price shall become effective the first of the month following a three (3) month period beginning on the first day of the month during which Seller submits the initial nominations of gas well gas pursuant to said Section 2.3.2. Thereafter, the price shall be redetermined for each succeeding three (3) month period within the first forty-five (45) days of such three month period using the below criteria. The price to be paid shall be the highest of the following, together with escalations provided herein:

(1) the price determined in accordance with the provisions of Section 3.2.1(i) above, said price to escalate monthly as provided therein; or

(2) the price per MMBtu equivalent to one hundred and ten percent (110%) of the price per MMBtu of Fuel Oil No. 2 computed to the nearest one-thousandth of a dollar which price shall be determined monthly in the manner provided below:

The price per gallon for Fuel Oil No. 2 shall be the arithmetic average for the month for which the price is to be determined, of the daily average of the high and low price of Fuel Oil No. 2 published by Platt's Oilgram - New York edition under the heading "South and East Terminals New York Harbor" for each period. For use in converting the price per gallon of Fuel Oil No. 2 to a price per MMBtu each gallon shall be deemed to contain 0.1381 MMBtu.

In the event the prices of Fuel Oil No. 2 shall cease to be published in Platt's Oilgram in the manner contemplated, Buyer and Seller shall by mutual agreement choose a new index or indices of reference, or in the event no other index for such element shall be published, the parties shall agree upon a replacement for such element. In the event Buyer and Seller shall not have mutually agreed in writing upon a new index or indices, or a new element, as the case may be, by the end of the calendar quarter for which the selection of a new index or indices or element becomes necessary in accordance with this Section 3.2.1(ii)2, the matter will be settled by arbitration as provided in Section 18.

Should the price of Fuel Oil No. 2 become regulated during the term hereof, then Seller and Buyer agree to negotiate another reasonable method for determining the commodity value of the deregulated gas in lieu of using Fuel Oil No. 2. If, after negotiations for at least sixty (60) days, the parties are unable to agree on such new method for determining the commodity value of the deregulated gas delivered hereunder, and Seller at such time desires to have determined another reasonable method for determining the commodity value of the deregulated gas, either Seller or Buyer may refer the matter to arbitration as provided in Section 18. The arbitrators shall give particular consideration to the commodity value pricing provisions contained in gas purchase contracts executed subsequent to the time Fuel Oil No. 2 becomes regulated for gas produced in the States of Wyoming, Utah, Colorado, Montana, Idaho, North Dakota or South Dakota. During the period of any negotiation or arbitration on such matter, Seller shall have the option in the determination of the alternate price hereunder to substitute for subsequent adjustments under this Section 3.2.1 (ii)(2) a price equal to the last effective alternate price per MMBtu increased each month at a rate which is the highest of:

(i) one percent (1%) above the price in effect during the immediately preceding calendar month; or

(ii) the monthly adjustment factor established pursuant to Section 102(b)(2) of the Natural Gas Policy Act of 1978; or

(iii) the monthly change in the Consumer Price Index for all Urban Consumers as determined in Section 3.2.1(i) 1 hereof; or

(3) A price per MMBtu equal to the arithmetic average of the two highest prices per MMBtu, excluding tax reimbursement and any production related costs, paid or payable by separate gas pipelines to gas producers not affiliated with such pipelines for deregulated gas delivered in the last month of the calendar quarter preceding the calendar quarter for which the price is to be determined. The contracts to be used in determining such two highest prices shall be limited to those pertaining to gas produced from the States of Wyoming, Utah, Colorado, Montana, Idaho, North Dakota and South Dakota, and delivered in the field where produced, and containing terms of not less than three (3) years but excluding any purchases of gas at prices authorized after the filing of a petition for relief from ceiling price limitations made by the seller of such gas. In the event the contracts so used provide for monthly escalations which are ascertainable at the time the redetermination is made, then the price payable under this subsection 3.2.1 (ii)(3) during each of the remaining two months of the calendar quarter in question shall be the arithmetic average of the prices per MMBtu, excluding tax reimbursement and any production related costs, payable each month under such contracts. Each party hereto shall have the right to request and promptly receive from the other party, from time to time, all information which such other party has pertaining to prices paid or payable for gas under contracts which might be pertinent under the provisions of this subsection 3.2.1 (ii)(3).

Should Seller and Buyer fail, in any instance, to agree on the two highest prices paid or payable as provided in subsection 3.2.1 (ii)(3) above, and Seller does not elect to accept the higher price determined under subsection 3.2.1 (ii)(1) and 3.2.1

(ii) above, then the determination of such two highest prices will be settled by arbitration as provided in Section 18.

3.2.2 It is the intent of the parties hereto that, subject to the provisions of Sections 3.2.3 and 3.2.4 hereof, Seller shall receive the highest price per MMBtu, exclusive of tax reimbursement, then being paid by any pipeline, including Buyer, to a producer not affiliated with such pipeline for deregulated gas produced from reservoirs located within the depths described in Exhibit B hereto and the area outlined in Exhibit C hereto and sold under a contract having a term of not less than three years. In the event either party has information that a pipeline so pays or is then required to pay a price for such gas which is higher than the price otherwise applicable under this Section 3.2, the party with the information shall promptly furnish the other party evidence of such occurrence, and the price under this contract shall be increased as of the first day of the month immediately following the date of such notice of higher price. Such increased price shall remain in effect hereunder until a price under another provision of this contract exceeds such increased price, the provisions of Section 3.2.3 or 3.2.4 are operative,or until a party hereto has evidence of gas being purchased from a reservoir within the aforesaid area at a price in excess of such increased price.

3.2.3 Notwithstanding the previous provisions of this Section 3.2, it is agreed that the price for all deregulated gas produced and delivered or for which payment is due hereunder shall be limited to the following ceilings:

(i) For the period through December 31, 1984, the price equivalent to one-hundred and thirty percent (130%) of the price per MMBtu of Fuel Oil No. 2 as calculated by the FERC pursuant to Section 203(a)(7) of the NGPA.

(ii) Commencing January 1, 1985, the higher of either (a) the price determined pursuant to Section 3.2.3(i) or (b) the price determined pursuant to Section 3.2.1(ii)3 or (c) the price determined pursuant to Section 3.2.2.

3.2.4 Should circumstances change subsequent to the execution of this contract so dramatically that severe economic hardship would result to either party if it were to comply with the pricing provisions of Section 3.2 above, but not merely because other gas purchase contracts contain provisions more favorable to either party, then either party may call for a Special Redetermination of price applicable to deregulated gas upon the terms and conditions contained in the following subsections:

(i) This Special Redetermination may be had only after five years after initial delivery and no more frequently than once every five years.

(ii) The parties will attempt by negotiations to arrive at pricing provisions applicable to deregulated gas which reflect the conditions then prevailing in the natural gas industry.

(iii) In the alternative, Seller may receive from a third party a bona fide offer for the deregulated gas sold hereunder, and Buyer may meet said bona fide third party offer. In the event that Buyer does not meet said offer to purchase such gas then Seller may accept the same and Buyer shall release all gas committed hereunder from the terms of this Agreement. Buyer shall use its best efforts to arrange transportation for the gas released hereunder at its cost of service to any point Seller directs for interconnection with the facilities of said third party.

(iv) In the event that the parties cannot arrive at other pricing provisions by negotiation and Seller does not elect to accept a third party offer, then Buyer and Seller shall submit the matter to arbitration pursuant to Section 18 to determine other pricing provisions which shall be based on the fair market value of the gas sold hereunder, but such pricing provisions shall not be less than the pricing provisions of the most recently executed gas purchase contracts between pipelines and gas producers not affiliated with such pipelines for deregulated gas within Wyoming, Colorado, Utah, Montana, Idaho, North Dakota and South Dakota. During arbitration, the price payable by Buyer to Seller shall be the higher of the initial price as escalated, as stated in Section 3.2.1(i) above or the last uncontested price.

(v) Notwithstanding any of the foregoing provisions of this Section 3.2.4, the price resulting from the Special Redetermination or arbitration shall in no event be below the initial price, as escalated, as provided for in Section 3.2.1(i).

3.2.5 Notwithstanding any of the foregoing provisions of Section 3.2, other than Sections 3.2.3 and 3.2.4, the price to be paid by Buyer to Seller for deregulated gas sold hereunder shall never be less than the price paid during the previous month's sales.

3.3 For any well which Seller files an eligibility determination with the appropriate jurisdictional agency pursuant to Section 503 of the NGPA in order to qualify said well and the gas produced therefrom under a specified category or a category for which price controls are no longer applicable, it is agreed that Seller may collect the applicable price determined under this Section 3 for such gas from the date such determination was filed with the appropriate jurisdictional agency and, if necessary, may retroactively collect such price plus interest at the maximum legal rate determined in accordance with the Regulations of the FERC, upon such determination being affirmatively approved and the time for review of any such approval having expired.

3.4 Notwithstanding anything to the contrary contained herein, it is agreed that in the event royalty is paid with respect to the leases committed under this contract at a rate or on a basis judicially determined by a final, unappealable judgment or by settlement agreed to by Buyer, which is higher than the price paid by Buyer pursuant to the provisions of this Section 3, then Buyer shall reimburse Seller for the difference between the amount of royalty actually paid by Seller and the amount of royalty which otherwise would have been paid by Seller had such royalty been computed on the basis of payments for gas made in accordance with the provisions of this Section 3, provided, however, Buyer shall not be obligated to make reimbursements to Seller of any excess royalty applicable to regulatory price controls unless Buyer is allowed to include such reimbursement in its recoverable cost of service or rate base.

SECTION 4. TAXES

4.1 Buyer shall reimburse Seller for the following taxes existing on the date of this agreement or which may be enacted or increased during the term of this agreement, which are imposed on and paid by Seller in respect of or applicable to the gas delivered to Buyer hereunder:

(i) For deregulated gas: any sales, transaction, occupation, service, production, severance, gathering, transmission, export or excise tax, assessment or fee levied, assessed or fixed by the United States, by any state or any other governmental authority, and taxes of a similar nature or equivalent in result (not including income, excess profits, capital stock, franchise, general property, or non-production based ad valorem taxes).

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January 8, 1982

The Honorable James A. McClure
Chairman
Committee on Energy and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Senator McClure:

In response to your letter of December 7, 1981, the Process Gas Consumers Group (PGC) provides the following responses to the Committee's follow-up questions concerning our November 6 testimony at the hearings on "Implementation of Title I of the Natural Gas Policy Act of 1978." We appreciate this additional opportunity to respond to questions of concern to the Committee.

(1) Question: "Do you support any amendments to the NGPA? If so, please describe in detail what you advocate."

Response: PGC strongly supports amendment of the NGPA, believing that new legislation is the only means of remedying the major flaws in that statute. In PGC's view, Congress should promptly reexamine and amend both the NGPA and related statutes in order to achieve both timely deregulation of natural gas and elimination of discriminatory restraints on gas use.

PGC's specific recommendations for amendments to the NGPA are described in detail in the attached memorandum, "Legislative Specifications For The Natural Gas Policy Reform Act of 1981," dated September 17, 1981 (Appendix A). As you will note, PGC's specifications address not only the issue of wellhead price decontrol, but also other important issues raised by the 1978 legislation, including gas market restraints such as NGPA incremental pricing and prohibitions on industrial oil and gas use in the Powerplant and Industrial Fuel Use Act.

With specific respect to incremental pricing, we also enclose for your consideration a separate document (Appendix B) containing suggested legislative language (and an explanatory statement) to effect immediate repeal of incremental pricing under NGPA Title II.

PGC's legislative specifications were developed as part of an effort to stimulate discussion on specific natural gas legislative issues, and they reflect the Group's current thinking on these important matters. However, we welcome the opportunity to work with the Members and Staff of the Committee and other interested parties in developing acceptable and workable legislation to amend the NGPA and related statutes.

(2) Question: "Several witnesses suggested that Congress should address 'the contract problem'. (a) Do you believe there is -- or will be -- a 'contract problem' under the NGPA? (b) If so, please explain what you mean. (c) Please describe in detail what you believe should be done to address this problem, and whether you believe new legislation is necessary or whether it can be dealt with administratively under existing law."

Response: PGC believes that there is a "contract problem" under the NGPA. The greatest effects of this problem will not actually be felt until we approach the NGPA's 1985 date for partial decontrol, but these effects may be clearly predicted now.

The contract problem stems from the fact that the lion's share of gas purchase contracts entered into by pipelines since April 20, 1977, contain indefinite price escalator terms, most often "most favored nation" clauses. These "most favored nation" clauses require gas prices to continue rising to match the highest prices being paid under other contracts for gas in a specified area (which in some contracts may include as many as seven states and two foreign countries). A second type of indefinite price escalator is the so-called commodity escalator which ties post-deregulation prices to unrealistic levels, such as 110% of the retail price of expensive No. 2 fuel oil. Some gas contracts have both "most favored nation" and commodity escalator provisions, as well as fixed minimum price terms defined by formula. In short, the contract problem lies in the fact that commodity escalator provisions could trigger the operation of virtually all the "most favored nation" clauses in contracts for gas to be deregulated in 1985, creating a domino effect of prices far above market-clearing levels. These high price terms are exacerbated by take-or-pay clauses in which pipelines commit to pay for at least 85% to 90% of the gas tendered by the seller, regardless of whether the pipeline's customers have any need for the gas.

The result of these dubious contract terms will likely be an extraordinary jolt in 1985, when prices under thousands of Section 102, 103, 105, and 106 contracts will be deregulated under the NGPA. At that point, virtually every pipeline in every state will suddenly have to reckon with price escalations whose impacts they may have grossly underestimated when signing gas contracts in the early 1980's.

While this sudden price explosion would eventually be worked out through market forces, that would occur only over a period of many turbulent months as massive price increases are met with sharp consumer resistance in the form of fuel switching and conservation and as pipelines are forced to seek renegotiation of gas purchase contracts. In addition, as gas demand is lost, the remaining consumers will not only have to pay the higher wellhead gas prices, but will also have to pick up the cost of take-or-pay payments and a larger share of the gas companies' fixed costs. Substantial pressure will also be placed on Congress to extend gas price controls (a vehicle for which is provided in NGPA Section 122), even though such a "quick fix" would only worsen the longer run problems of supply, demand, and price.

PGC believes that the contract problem cannot be dealt with successfully without new legislation. Neither the Federal Energy Regulatory Commission (FERC) nor the Department of Energy (DOE) has adequate administrative authority under existing law to defuse this time bomb. Specifically, PGC proposes that the operation of both commodity escalators and "most favored nation" clauses be temporarily suspended until the transition to decontrol of all natural gas is completed. (Direct precedent for this approach is found in NGPA Section 313). This would provide buyers and sellers of gas an opportunity to renegotiate contracts in an orderly manner in anticipation of complete price deregulation by a date certain. A detailed discussion of PGC's proposal is set forth at pages 5-9 of the attached legislative specifications. PGC is aware that other methods for dealing with the contract problem have also been proposed. PGC will be pleased to work with the Committee and all other interested persons to resolve this serious problem in a broadly acceptable manner.

(3) Question: "Your associate Mr. Curtis testified that, 'We think the problem is the cushion that you speak of is not uniformly distributed so it creates a problem there ...' (Tr. p. 204) Please provide the Committee with your best estimate of how the cushion will be distributed, indicating which pipelines will be in relatively worse shape."

Response: As indicated in the earlier testimony of Jack Elam and Jerry Curtis on behalf of PGC, the uneven distribution of gas subject to permanent price controls under the NGPA -- the so called old gas "cushion" -- will cause major supply and price problems both before and after most gas is deregulated in 1985. Pipelines with disproportionately large shares of the cheap gas cushion will be able to outbid others for new supplies. This will cause some pipelines to have shortages while others have surpluses, and it will cause the price of gas in some areas to exceed average market clearing levels for reasons entirely unrelated to pipeline economics. These distortions will, in turn, cause significant inequities among gas consumers, including industrial competitors served by different pipelines. Moreover, these inequities will likely exist even between neighboring communities in the same state which happen to have different pipeline suppliers.

While most observers agree that the interstate market as a whole will have a substantially larger cushion of price regulated gas in 1985 than will the intrastate market, the distribution of the cushion is very uneven among interstate pipelines. This fact is well demonstrated by the attached table (Appendix "C"), which shows estimates of 24 interstate pipelines' deliveries from permanently price-controlled gas as a percentage of their total gas deliveries. Plainly, some interstate pipelines will be far worse off than others, and some interstate pipelines will likely be worse off than some intrastate pipelines.

Appendix "C" represents PGC's attempt, in response to the Committee's question, to estimate the distribution of the old gas cushion among interstate pipelines. The estimates are based upon a review of annual gas supply projections (Form 15) filed with the FERC by most major interstate pipelines. (No comparable source exists for intrastate pipelines). In the Form 15, which must be filed annually, each major interstate pipeline must state, inter alia, the actual deliveries of gas from all sources during the report year ending December 31; it must project "for twenty years, the annual volumes of dedicated salable gas estimated to be deliverable from the various supply sources to meet the total annual requirements of the pipeline system;" and it must provide detailed five-year projections for individual sources of gas. */

Inasmuch as most of the cushion of permanently price-controlled gas will be based upon gas reserves dedicated to in-

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*/ Thus, for example, in its Form 15 for report year 1977, which was filed on April 1, 1978, each major pipeline states its actual gas production, purchases, and total reserves for the year ending December 31, 1977; it projects total annual deliveries for twenty years from dedicated proven gas reserves and other sources under contract as of December 31, 1977 and it provides detailed five-year data for each source. Data on actual deliveries during 1977 and the 20-year "deliverability" projections are conveniently broken down between deliveries of "owned and contracted" proven reserves (i.e., expected deliveries from dedicated proven reserves owned by the pipeline or under a gas purchase contract with a producer) and "pipeline purchases" (i.e., expected deliveries from other pipelines, LNG operations, etc).

terstate commerce prior to April 20, 1977, data in the 1977 and 1980 Form 15s make it possible to approximate each pipeline's total 1985 deliveries from its own old gas cushion, as well as from its pipeline suppliers' old gas cushions. By assuming that each pipeline will acquire as much gas in 1985 as it actually purchased or produced in 1980, one can then estimate the size of each pipeline's cushion relative to its total supply needs. That is the basis for the estimates in Appendix C. */

While these estimates are only approximations, and while the DOE and FERC could -- indeed, should -- use their greater resources to produce more precise pipeline-by-pipeline

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*/ The 1977 Form 15 is important because it indicates the volume of gas deliveries expected from dedicated gas reserves and pipeline suppliers under contract as of December 31, 1977. Since most gas dedicated to interstate commerce after April 20, 1977 will be deregulated in either 1985 or 1987, and since most gas dedicated before April 20, 1977 will never be deregulated under the NGPA, the Form 15 for the year ending December 31, 1977 should provide a reasonable basis for estimating the annual deliveries expected in 1985 from all owned and contracted gas reserves that will remain price-controlled permanently. Further, using the 1977 and 1980 Form 15s of each pipeline and its pipeline suppliers, one can estimate for 1985 the amount of permanently price-controlled gas that will be delivered to each pipeline by its pipeline suppliers. Then, by totaling the estimated deliveries of "cushion" volumes from owned and contracted and pipeline sources, and by assuming that each pipeline's total 1985 deliveries will equal its 1980 levels, one can estimate each pipeline's total deliveries from all permanently price-controlled sources as a percentage of its total deliveries from all sources. This is the basic approach underlying PGC's estimates.

projections, PGC's estimates provide at least a general guide concerning the relative positions of most pipelines. */

As demonstrated by Appendix C's estimates of 24 pipelines' relative deliveries from permanently price-controlled sources, the differences among pipelines are dangerously large. For example:

- Of the 24 pipelines, the average of the cushions of the four best situated pipelines is four times as large as the average of the four pipelines that are worst off.

- The estimated cushion of the eighth ranked pipeline in 1985 is fully twice as large as that of the 19th ranked

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**/ Obviously, for example, estimates based on Form 15 data depend directly on the accuracy of individual pipelines' projections of 1985 deliveries, which may be high or low; and estimated percentages will be affected to the extent total 1985 deliveries are higher or lower than in 1980. Further, PGC's cushion estimates may be high to the extent they include deliveries from reserves dedicated between April 20 and December 31, 1977, although they may be low to the extent they exclude deliveries from post-1977 wells on OCS tracts leased before April 20, 1977. Also, some projected imports may have been included within estimates of owned and contracted supplies and thus may not have been excluded from the estimated price-controlled cushion. Other factors may also be relevant to the size of individual pipelines' cushions in 1985, although they may tend to be offsetting and should not cause major changes for many pipelines. Apart from the volumes of the deliveries of price-controlled gas, one would also need to know the prices being paid for new and old gas in order to know whether a pipeline's customers are well protected. That would require a far more detailed study than can be undertaken here.

pipeline and nearly four times as large as the two worst situated pipelines.

The information in Appendix C and Appendix D */ also shows that, even within the interstate gas market, significant regional and local differences will exist as a result of the uneven distribution of the cushion:

- Many eastern and southern states and some midwestern states could be very severely hurt by difficulties faced by Mississippi River Transmission, United, Kentucky-West Virginia, Trunkline, Southern Natural, and Transcontinental.

- Eastern and midwestern states served by Panhandle Eastern, Texas Gas, National Fuel, Columbia, Michigan Wisconsin, and Algonquin may also be disadvantaged.

- Several states, such as Pennsylvania, New Jersey, Kentucky, New York, and Missouri, may find that prices and supply availability will vary widely among communities as a result of differences among pipelines serving those states.

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*/ Appendix D shows the specific states served by each of the pipelines shown in Appendix C.

While these estimates are only approximate, they are sufficient to show the dangers of allowing the NGPA to run its course without amendment.

We hope that our responses to these questions have provided some useful information to the Committee, and we will welcome the opportunity to work further with the Members and Staff of the Committee in addressing these important issues.

Respectfully submitted,
Jack Elam
Jack Elam
Chairman of PGC

APPENDIX A
Process Gas Consumers Group
January 8, 1982

LEGISLATIVE SPECIFICATIONS FOR THE NATURAL GAS POLICY REFORM ACT OF 1981

This memorandum sets forth specifications for comprehensive natural gas legislation. In each subject area, existing law is briefly described; then specific legislative changes are discussed.

TITLE I -- WELLHEAD PRICING

NEW NATURAL GAS

Current Law: Title I of the Natural Gas Policy Act of 1978 ("NGPA") establishes a program for the phased deregulation of many categories of new natural gas, with price controls on several of those categories being removed on December 31, 1984. The NGPA leaves most types of old gas price-regulated until such supplies are exhausted and applicable contracts expire -- usually considered to be some time between 1990 and 1995.

Summary of Amendment: Create a three-tier program for ultimately removing price controls from all natural gas, as follows:

(1) "Newly-discovered" gas -- Remove price controls immediately from any gas (regardless of where or how produced) from a well commenced, subject to certain conditions, on or after the earlier of (a) the date of enactment or (b) January 1, 1982.

(2) "Incentive" gas -- Phase out between now and January 1, 1985, all price controls on gas (a) which is produced from wells commenced prior to the earlier of the date of enact-

ment or January 1, 1982, and (b) which falls into the categories defined in NGPA Sections 102(c); 103(c); 105 and 106(b)(1) (for contracts in excess of $1.00 on 12/31/84); 107(c)(5), and 121(c).

(3) "Old" gas -- Phase out between now and July 1, 1986, all price controls on all remaining natural gas, including types of gas which would never have been deregulated under the NGPA.

(4) Limitation on indefinite price escalators -- In order to assure that decontrol of some gas does not cause other types of gas to jump automatically to higher price levels, a temporary prohibition would be imposed on indefinite price escalators (including "most favored nation" clauses) in gas contracts.

Discussion: It bears special emphasis that providing for gas decontrol does not necessarily mean that the price of the gas falling into any given category will automatically jump to some higher level. Full decontrol allows new contracts to be negotiated and existing contracts to be renegotiated to higher prices; it does not require that this happen. Similarly, phased decontrol allows contract prices to be freely renegotiated or escalated (by the contract's allowable terms) to the applicable higher ceiling level; it does not require that the prices of gas in the phase-in categories automatically rise to the new ceilings.

The three-tier program summarized above is intended to accomplish several goals: (1) to provide maximum incentive for exploration and production of new gas resources; (2) to revise the NGPA price decontrol path to bring "incentive" category gas up to actual wellhead price parity with oil as of the current NGPA decontrol date of 1/1/85; */ (3) to erode gradually the "cushion" of old price-controlled gas in the interstate market and thus substantially inhibit any market disorder problems upon decontrol; and (4) to move toward a fully free gas market as rapidly and as smoothly as possible, consistent with the need not to create substantial price shocks to individual users and the economy generally.

Legislative Specifications For the Amendment: To achieve the described goals, the decontrol program should be implemented through the following provisions:

(1) "Newly-discovered" gas potentially qualifying for immediate decontrol would also be subject to certain reporting requirements aimed at discouraging producers from abandoning old wells and commencing unnecessary new wells or completions in the same reservoir simply so that sales could qualify for a deregulated rate. These reporting provisions,

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*/ The current NGPA price path, if not revised, will cause the deregulated price of incentive gas to fall far short of parity with the price of crude oil on 12/31/84 -- giving rise to potentially significant market disorder problems, which themselves might be viewed by some as justifying the continuation of price controls.

based on the old Federal Power Commission's Opinion 770-A (Docket No. RM75-14, Nov. 5, 1976), would require a producer to justify in writing the need for any new well or any new completion within an established proration unit in the same reservoir; eligibility for deregulated rates would be subject to review and verification of the producer's explanatory statement. */ Failure to qualify would limit the rate for sales from the new well or recompletion to rates applicable to sales from the existing well.

(2) The categories identified above as *"incentive" categories* are (with one exception) all currently scheduled to be decontrolled under the NGPA by 1985 or 1987. The exception is §107(c)(5) gas -- gas which FERC determines to be produced under conditions presenting extraordinary risks or costs -- which is never deregulated under the NGPA. All other types of §107(c) high-cost gas are already decontrolled. The addition of this category to those eligible for phased decontrol would be consistent with the aim of encouraging full production of "old" gas resources, instead of abandoning them in preference for more profitable "new" gas.

(3) All gas not decontrolled immediately under the first tier ("newly-discovered" gas) would be subject to *phased decontrol.* "Incentive" gas would gradually be decon-

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*/ As was the case with federal oil pricing regulations, 10 C.F.R. §212, state law would determine what constitutes a reservoir.

trolled between the date of enactment and 1/1/85, as originally intended under the NGPA, but via a more effective mechanism. "Old" gas, not intended ever to be deregulated under the NGPA, would gradually be decontrolled between the date of enactment and 7/1/86. The phase-out mechanism would be the same for these two tiers, differing only in the target date toward which each is moving. Each phase-out mechanism would gradually close the gap between gas and oil wellhead prices between the date of enactment and the respective target date. It would do this by each month (or, perhaps, each quarter) adjusting the maximum lawful price for gas in the relevant categories by a fraction: the numerator of each month's (or quarter's) fraction would be the difference between the current ceiling gas price and the most recently available average crude oil wellhead price; the denominator of each month's (or quarter's) fraction would be the number of months (or quarters) remaining until the respective decontrol target date. Gas/oil price parity at the wellhead would necessarily be achieved in each tier as of that respective date; all gas would be decontrolled, therefore, as of the later of the two target dates.

(4) In order to assure that the decontrol of "newly-discovered" gas does not cause other types of gas to jump automatically to higher price levels, a temporary prohibition would be imposed on indefinite price escalators (including "most favored nation" clauses) in gas contracts. That is, no

price paid in any first sale of deregulated gas would be permitted to trigger automatically any indefinite price escalator clause in any interstate or intrastate gas contract until July 1, 1986. */ Direct precedent for this prohibition is found in NGPA §313, which preempts indefinite price escalator clauses from being triggered by sales of "high-cost" (NGPA §107(c)) gas.

This temporary prohibition on the operation of certain contract escalators is intended to prevent the type of disorder which could otherwise occur during the transition to full deregulation. It would have the following elements:

o Two principal types of situations are sought to be prevented through this provision:

(A) The automatic escalation of contract prices applicable to "incentive" or "old" gas up to (or above) the new maximum prices permitted for gas in those categories -- As in NGPA §313, the mere establishment of higher ceiling prices by the amendment is not intended to trigger the escalation of existing contract prices to those ceilings. But, for example, once "incentive" gas is actually sold at the new ceiling level, other "incentive" gas contracts' most favored nation

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*/ This prohibition would not apply to "area rate" type clauses which permit contract prices to be escalated automatically to ceiling prices allowed by statute or regulation.

clauses may be activated to escalate their prices to the new ceiling as well. */

(B) The escalation of "incentive" gas prices far above true market prices when such gas is fully decontrolled on 1/1/85 -- Many "incentive" gas contracts (especially NGPA §102 contracts) contain terms providing that, upon deregulation, the price of such gas will automatically escalate to as much as 110% of the price of No. 2 fuel oil. Such an escalated price would far exceed the market clearing price for gas, which is typically thought to approximate at the burner-tip the Btu-equivalent price of No. 6 oil. The bill, therefore, would temporarily prevent the automatic operation of such escalators.

o The prohibition would not apply to any provision (including any indefinite price escalator) in any contract for "newly-discovered" gas or for NGPA §107(c) gas (which is already decontrolled).

o The prohibition would not prevent parties at any time from voluntarily agreeing to renegotiate their contracts

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*/ In no event, of course, can "incentive" or "old" gas be sold (prior to their respective decontrol dates) at prices higher than the new ceilings provided in the bill. Thus, for example, the immediate deregulation of "newly-discovered" gas cannot in itself be used as a springboard to deregulating "incentive" or "old" gas before 1/1/85 and 7/1/86, respectively -- regardless of the type of escalator a contract may contain.

to the new respective price ceiling levels for "incentive" and "old" gas. Even more importantly, after "incentive" gas is decontrolled on 1/1/85 and ceiling prices no longer apply to that category, parties are completely free to voluntarily renegotiate a pre-1985 "incentive" gas contract to any price they wish. [*] The only restriction imposed by the bill's escalator prohibition is that any escalation be through affirmative renegotiation, not through automatic contract price increases. The reasoning is that, if not temporarily prohibited, current contract escalator provisions (such as those increasing gas prices to 110% of the price of No. 2 fuel oil) would automatically result in "incentive" gas prices which far exceed market-clearing levels (due to the remaining price-controlled "old" gas cushion available until 7/1/86). In contrast with such automatic escalation, affirmative arms-length renegotiation should result in true free market prices which are neither artificially high (as distorted by the remnants of price controls) nor artificially low (since they will then be at parity with crude oil prices).

o The prohibition is a temporary, transitional device, remaining in effect only until full decontrol is achieved. That is, until July 1, 1986, the prohibition would apply both to existing contracts for "incentive" and "old" gas and to all contracts for such gas entered into after the date of enactment.

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[*] As of 1/1/85, parties would also be free to enter into new contracts (for gas formerly in the "incentive" category) which include indefinite price escalators. Such new contract escalators would not be affected by the prohibition provision and could become immediately effective.

- After July 1, 1986, when all price controls have been completely phased out, the indefinite price escalators in all then-existing contracts can once again become effective, and, perhaps more significantly, buyers and sellers may then enter into new long-term contracts which contain effective indefinite escalator provisions. That is, once a free market has been fully achieved, parties may enter into whatever contract provisions they wish.

ADMINISTRATIVE ESCALATION OF OLD GAS PRICES

Current Law: NGPA §§104(b)(2) and 106(c) allow FERC, under certain conditions, to prescribe price ceilings for flowing interstate gas which are higher than the ceilings which would otherwise apply. Also, NGPA §107(c) allows FERC to define as "high-cost" gas any gas which is produced under conditions which FERC "determines to present extraordinary risks or costs."

Amendment: Legislate more administrative flexibility for FERC to provide incentives to producers to develop old gas resources fully rather than abandon them in favor of more profitable decontrolled gas. Amend NGPA §107(c)(5) to specify that the "extraordinary risks or costs" standard is in fact met in the case of gas produced via utilization of certain production enhancement techniques.

PRICE RECONTROL AUTHORITY

Current Law: NGPA §122 allows either the President or the Congress to reimpose price controls on a temporary, one-time basis under certain conditions.

Amendment: NGPA §122 would be repealed in its entirety.

TITLE II -- INCREMENTAL PRICING

Current Law: NGPA Title II contains provisions establishing an "incremental pricing" program which imposes upon certain industrial users a disproportionate share of higher gas costs.

Amendment: NGPA Title II and the incremental pricing program would be totally repealed as of the date of the new bill's enactment.

TITLE III -- INTER-MARKET SALES

Current Law: NGPA §311 permits intrastate pipelines to sell natural gas to interstate pipelines (and to local distribution companies served by any interstate pipeline), provided that the rates and charges for such sales are fair and equitable. NGPA §312 permits FERC to allow any intrastate pipeline to assign to any interstate pipeline or local distribution company (without compensation) its right to receive "surplus" natural gas.

Amendment: Amend NGPA §§311 (b) and 312 to permit any interstate pipeline (or local distribution company served by an interstate pipeline) to sell or assign surplus natural gas to any intrastate pipeline. Such amendment would thus permit temporary gas surpluses in either the interstate or intrastate market to be used to help relieve shortages and take-or-pay problems in the other market, to the benefit of all gas consumers. In connection with such sales, FERC would be required to examine the circumstances of each supplier which applies for permission to make such off-system sales, including: (1) the volumes it seeks to sell, (2) its current and projected short- and long-term supply and demand balances, (3) the proposed rates at which the sales are to be made */, and (4) why it would be in the best interests of the seller's customers and the public generally to make off-system sales at the price proposed rather than to husband the gas for its own customers or sell it to others at a higher price. FERC's review of such circumstances would recognize that each supplier's primary obligation is to its on-system customers, and the terms of any authorized off-system sale would be designed accordingly.

TITLE IV -- CURTAILMENT PRIORITIES

STATUTORY CATEGORIES

Current Law: NGPA Title IV establishes three statutory curtailment priorities. In the first category are cer-

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*/ Existing NGPA provisions for pricing §311 sales at the intrastate pipeline's average system gas acquisition cost must also be modified to protect against imprudent off-system sales at prices which result in detriment to existing system customers.

tain "high priority" (residential, small commercial, and selected other) uses; in the second priority are "essential agricultural uses"; in the third category are "essential industrial process or feedstock uses."

Amendment: Amend NGPA §§401 and 402 to eliminate the end-product preference currently afforded to agricultural uses. Modify the definition of "high-priority" uses falling into the first curtailment category by deleting from it those large school and hospital boilers with alternate fuel capability. Modify the other two defined categories by providing (1) that all process and feedstock uses -- be they industrial or agricultural -- fall into the second category and (2) that uses which are neither process, feedstock, nor boiler uses (regardless of end-product) fall into the third category. No large boiler fuel use would enjoy a higher curtailment priority than any process or feedstock use, consistent with traditional end-use/cost-of-conversion principles. Moreover, the bill would provide that no curtailment distinctions shall be drawn as between similarly-sized boilers simply on the basis that one is classified "commercial" and another is classified "industrial."

USDA AUTHORITY

Current Law: NGPA §401(c) provides for the Secretary of Agriculture to certify "essential agricultural uses."

Amendment: Insofar as the new bill would eliminate the priority for agricultural uses, the Secretary of Agriculture's certification authority and other authorities under NGPA Title IV would be unnecessary and, therefore, would be eliminated.

TITLE V -- PROHIBITIONS ON OIL AND GAS USE

Current Law: The Powerplant and Industrial Fuel Use Act of 1978 ("FUA") mandates certain prohibitions on the use of gas or oil in utility and industrial boilers. FUA Title II contains certain prohibitions and restrictions affecting new major industrial fuel burning installations ("MFBI's") and electric utility powerplants. FUA Title III contains certain prohibitions and restrictions affecting (or potentially affecting) existing MFBI's and powerplants. Both Titles II and III provide for certain temporary and permanent exemptions from FUA prohibitions.

Amendment: Repeal the Fuel Use Act in its entirety.

TITLE VI -- GAS RATE DESIGN AND RETAIL RATES

Current Law: Title III of the Public Utility Regulatory Policies Act of 1978 ("PURPA") establishes certain federal "standards" with respect to utility advertising and termination of gas service; authorizes federal intervention in state gas utility rate proceedings; contains certain reporting requirements; and commissions a gas utility rate design study and report.

Amendment: Repeal PURPA Title III in its entirety.

September 17, 1981

APPENDIX B
Process Gas Consumers Group
January 8, 1982

INCREMENTAL PRICING

Section 101. Title II of the Natural Gas Policy Act of 1978 (15 U.S.C. 3341-3348) ("NGPA") is repealed.

Section 102. (a) Section 121(b) of the NGPA (U.S.C. 3331(b)) is further amended--

(1) by striking out "Effective beginning on the effective date of the incremental pricing rule required under section 201, the" and inserting in lieu thereof "The"; and

(2) by striking out "shall cease to apply" and inserting in lieu thereof "shall not apply".

(b) Section 502 of the NGPA (15 U.S.C. 3412) is amended by striking out subsection (d).

(c) Section 504(b) of the NGPA (15 U.S.C. 3414(b)) is amended --

(1) by striking out paragraph (3);

(2) in paragraph (1), by striking out "paragraphs (2) and (3)" and inserting in lieu thereof "paragraph (2)"; and

(3) in paragraph (4), by striking out "paragraph (1), (2), or (3)" and inserting in lieu thereof "paragraph (1) or (2)".

(d) Section 506 of the NGPA (15 U.S.C. 3416) is amended by striking out subsection (d).

(e) Section 507 of the NGPA (15 U.S.C. 3417) is repealed.

(f) Section 601(c)(2) of the NGPA (15 U.S.C. 3431 (c)(2)) is amended--

(1) by striking out "-- (A)" and inserting in lieu thereof a comma;

(2) by striking out "and" at the end of former subparagraph (A); and

(3) by striking out "(B) such recovery is not inconsistent with any requirement of any rule under section 201 (including any amendment under section 202),".

(g) The table of contents for the NGPA is amended by striking out the items relating to Title II and the item relating to Section 507.

Section 103. (a) Effective beginning on the date of the enactment of this section, each interstate pipeline and local distribution company which was formerly subject to the provisions of Title II of the NGPA shall immediately take the following actions:

(1) Each such interstate pipeline shall clear both its unrecovered incremental gas costs account and its unrecovered incremental surcharges account of all amounts accumulated therein by

(A) immediately transferring all such amounts to its unrecovered purchased gas costs account,

(B) proceeding to collect all such amounts in due course pursuant to regulations prescribed by the Federal Energy Regulatory Commission, and

(C) doing all such other acts as the Federal Energy Regulatory Commission may prescribe for the purpose of effecting total repeal of Title II of the NGPA as of the date hereof.

(2) Each such local distribution company shall clear both the unrecovered incremental gas costs account and the unrecovered incremental surcharges account, which it was previously required to establish pursuant to regulations prescribed by the Federal Energy Regulatory Commission, of all amounts accumulated therein by

(A) immediately transferring all such amounts to the account to which the company's purchased gas costs are ordinarily debited, and then

(B) proceeding to collect all such amounts in due course, whether pursuant to pertinent regulations prescribed therefor by the regulatory body having jurisdiction over such company's rates and charges, or otherwise.

(b) As of the effective date hereof, no interstate pipeline or distribution company which was formerly subject to the provisions of Title II of the NGPA shall

(1) debit any amount to any unrecovered incremental gas costs account;

(2) debit any amount to any unrecovered incremental surcharges account;

(3) bill incremental pricing surcharges to any customer; or

(4) otherwise comply with the provisions of 18 C.F.R. Part 282 or other regulatory provisions which implement Title II of the NGPA.

(c) For purposes of this section--

(1) the term "unrecovered incremental gas costs account" means the account designated as Account 192.1 of the Uniform System of Accounts Prescribed for Natural Gas Companies, 18 C.F.R. Parts 201 and 204;

(2) the term "unrecovered incremental surcharges account" means the account designated as Account 192.2 of the Uniform System of Accounts Prescribed for Natural Gas Companies, 18 C.F.R. Parts 201 and 204;

(3) the term "unrecovered purchased gas costs account" means the account designated Account 191 of the Uniform System of Accounts Prescribed for Natural Gas Companies, 18 C.F.R. Parts 201 and 204.

INCREMENTAL PRICING REPEAL PROVISIONS

Section 101. Title II of the Natural Gas Policy Act of 1978 ("NGPA") established a program for charging to selected industrial consumers served through the interstate pipeline system a disproportionate share of the higher new wellhead and other natural gas costs resulting from partial, phased decontrol under NGPA Title I. More specifically, interstate pipelines are required under the program to set apart certain portions of the costs they pay for natural gas; the amounts set aside depend upon where and when the gas is purchased. The pipelines are then required to pass on these costs in the form of surcharges, through local gas suppliers, to certain industrial consumers only.

It is intended in this section that the incremental pricing program be terminated immediately upon the enactment of the bill and that no further incremental pricing surcharges be charged to consumers.

Section 102. Conforming amendments to the NGPA to delete references to Title II. (Note: The repeal of NGPA Section 507 in subsection (e) of this provision assumes repeal of the authority in NGPA Section 122 to reimpose price controls.)

Section 103. This section provides a mechanism through which the effects of the incremental pricing program can be terminated immediately upon enactment of the bill. It is intended that pipelines and distribution companies will immediately cease collecting incremental pricing surcharges. Rather than bill affected users for gas acquisition costs which have already been incurred and debited to incremental pricing accounts, such costs are to be recovered through each gas supplier's general purchased gas costs account.

More specifically, each interstate pipeline and local distribution company is required, under current FERC regulations, to maintain special accounts which track incremental gas costs incurred and incremental pricing surcharges billed and collected. It is the intent of this section that each natural gas supplier would recover incremental gas costs which are accrued and unbilled as of the date of enactment just as it would recover its purchased gas costs generally -- i.e., not solely from non-exempt industrial users, but from all customers.

To do this, each interstate pipeline would, as of the date of enactment, clear both its unrecovered incremental gas costs account and its unrecovered incremental surcharges account (Accounts 192.1 and 192.2, respectively, of the Uniform System of Accounts) of all amounts currently accumulated in them. These amounts would be transferred to the pipeline's unrecovered purchased gas costs account (Account 191 of the Uniform System of Accounts) and then collected from customers in due course under the FERC regulations which govern the recovery of unrecovered gas costs generally, 18 C.F.R. §154.38(d)(4), or such other provisions as the FERC, by rule or order, may prescribe to carry out the intent of this section.

Under current FERC regulations, 18 C.F.R. §282.502, local distribution companies too have been required to maintain unrecovered incremental gas costs accounts and unrecovered incremental surcharges accounts. Each of these accounts, then, should also be cleared of all amounts currently accumulated in it by transferring such amounts to whatever account or accounts are ordinarily used by the company to reflect incurrence and collection of purchased gas costs generally. These amounts should then be collected in due course along with the distribution company's other purchased gas costs in accordance with whatever state or local regulations, if any, govern recovery of such costs.

Subsection (b) of this section is intended to prohibit natural gas suppliers from accumulating any new amounts in incremental pricing surcharge accounts and from billing any such amounts to any customer.

APPENDIX C
Process Gas Consumers Group
January 8, 1982

Estimated Deliveries In 1985 From Old Gas Cushion As A Percentage Of Pipeline's Total Supply Requirements (Based on FERC Form 15 Data For 1977 And 1980)

1.	Kansas-Nebraska Natural Gas Co.	64%
2.	Cities Service Gas Co.	56%
3.	Arkansas Louisiana Gas Co.	51%
4.	Colorado Interstate Gas Corp.	47%
5.	Montana-Dakota Utilities Co.	45%
6.	El Paso Natural Gas Co.	41%
7.	Texas Eastern Transmission Co.	41%
8.	Northern Natural Gas Co.	40%
9.	Northwest Pipeline Corp.	40%
10.	Tennessee Gas Pipeline (Division of Tenneco)	38%
11.	Algonquin Gas Transmission Co.	38%
12.	Consolidated Gas Supply Corp.	37%
13.	Natural Gas Pipeline Co. of America	36%
14.	Michigan Wisconsin Pipeline Co.	34%
15.	Texas Gas Transmission Corp.	32%
16.	Columbia Gas Transmission Corp.	32%
17.	National Fuel Gas Supply Corp.	30%
18.	Panhandle Eastern Pipeline Co.	29%
19.	Transcontinental Gas Pipe Line	19%
20.	Southern Natural Gas Co.	17%
21.	Trunkline Gas Corp.	16%
22.	Mississippi River Transmission	15%
23.	Kentucky West Virginia Gas Co.	11%
24.	United Gas Pipe Line Co.	11%

APPENDIX D
Process Gas Consumers Group
January 8, 1982

States Served by Pipelines Identified in Appendix C

The following is a list of states directly served by various interstate pipelines, most of which are mentioned in PGC's statement, along with an indication of the number of additional states indirectly affected through sales to other pipelines. The states served are listed in alphabetical order, and the volumes sold into each state will vary substantially. */

Algonquin Gas Transmission Company is authorized to sell gas in Connecticut, Massachusetts, New Jersey, New York, and Rhode Island.

Arkansas Louisiana Gas Company is authorized to sell gas in Arkansas, Kansas, Louisiana, Oklahoma, and Texas. Arkansas Louisiana sells gas to one other interstate pipeline which in turn is authorized to sell into two additional states.

Cities Service Gas Company is authorized to sell gas in Kansas, Missouri, Nebraska, Oklahoma, and Texas. Cities Service sells to two other pipelines which in turn are authorized to sell into four additional states.

Colorado Interstate Gas Company is authorized to sell gas in Colorado, Kansas, New Mexico, and Wyoming. Colorado Interstate Gas Company sells to eight other pipelines which in turn are authorized to sell into twenty additional states.

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*/ The listings are derived from an FERC News Release of February 13, 1981 and from recent Form 16's filed by the various pipelines.

Columbia Gas Transmission Corporation is authorized to sell gas in Kentucky, Maryland, New Jersey, New York, Ohio, Pennsylvania, Virginia and West Virginia. Columbia sells gas to one other pipeline which in turn sells gas in certain of the same states.

Consolidated Gas Supply Corporation is authorized to sell gas in New York, Ohio, Pennsylvania, Virginia, and West Virginia. Consolidated Gas Supply Corporation sells gas to two other interstate pipelines which in turn are authorized to sell into seven additional states.

El Paso Natural Gas Company is authorized to sell gas in Arizona, Colorado, New Mexico, Oklahoma and Texas, and it is a major supplier of California.

Kansas-Nebraska Natural Gas Company is authorized to sell gas in Colorado, Kansas, Nebraska and Oklahoma. Kansas-Nebraska sells gas to two other interstate pipelines which in turn are authorized to sell into nine additional states.

Kentucky West Virginia Gas Company is authorized to sell gas in Kentucky.

Michigan Wisconsin Gas Pipeline Company is authorized to sell gas in Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Ohio, Oklahoma, Tennessee, Texas, and Wisconsin. Michigan Wisconsin sells gas to two other interstate pipelines which in turn are authorized to sell gas into seven additional states.

Mississipppi River Transmission Corporation is authorized to sell gas in Arkansas, Illinois, Louisiana, and Missouri. Mississippi River Transmission sells gas to two other pipelines which in turn are authorized to sell gas in ten additional states.

Montana-Dakota Utilities Company is authorized to sell gas in Minnesota, Montana, North Dakota, South Dakota, and Wyoming.

National Fuel Gas Supply Corporation is authorized to sell gas in New York, Pennsylvania, and Ohio.

Natural Gas Pipeline Company of America is authorized to sell gas in Arkansas, Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma and Texas. Natural Gas Pipeline Company sells gas to two other interstate pipelines which in turn are authorized to sell gas into four additional states.

Northern Natural Gas Company is authorized to sell gas in Colorado, Illinois, Iowa, Kansas, Michigan, Missouri, Minnesota, Montana, Nebraska, New Mexico, Oklahoma, and Wisconsin. Northern Natural sells gas to seven other pipelines which in turn are authorized to sell into ten additional states.

Northwest Pipeline Corporation is authorized to sell gas in Colorado, Idaho, New Mexico, Oregon, Utah, Washington, and Wyoming. Northwest Pipeline Corporation sells gas to five other interstate pipelines which in turn are authorized to sell to six additional states.

Panhandle Eastern Pipeline Company is authorized to sell gas in Colorado, Illinois, Indiana, Kansas, Michigan, Missouri, Ohio, Oklahoma, Texas, and Wyoming. Panhandle Eastern sells gas to three other interstate pipelines which in turn are authorized to sell gas into nine additional states.

Southern Natural Gas Company is authorized to sell gas in Alabama, Georgia, Louisiana, Mississippi, South Carolina, and Texas. Southern Natural sells gas to three other interstate pipelines which in turn are authorized to sell gas into twelve additional states.

Tennessee Gas Pipeline Company (A Division of Tenneco) is authorized to sell gas in Alabama, Arkansas, Connecticut, Kentucky, Louisiana, Massachusetts, Mississippi, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Texas, and West Virginia. Tennessee sells gas to fifteen other interstate pipelines which in turn are authorized to sell into ten additional states.

Texas Eastern Transmission Company is authorized to sell gas in Alabama, Arkansas, Illinois, Indiana, Kentucky, Louisiana, Maryland, Missouri, Mississippi, New Jersey, New York, Ohio, Pennsylvania, Tennessee and Texas. Texas Eastern sells gas to seven other interstate pipelines which in turn are authorized to sell into four additional states.

Texas Gas Transmission Corporation is authorized to sell gas in Arkansas, Illinois, Indiana, Kentucky, Louisiana, Ohio, Tennessee and Texas. Texas Gas Transmission sells gas to seven other interstate pipelines which in turn are authorized to sell gas into fourteen additional states.

Transcontinental Gas Pipe Line Corporation is authorized to sell gas in Alabama, Georgia, Louisiana, Maryland, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Texas and Virginia. Transcontinental sells gas to six other interstate pipelines which in turn are authorized to sell into four additional states and the District of Columbia.

Trunkline Gas Company is authorized to sell gas in Arkansas, Illinois, Indiana, Kentucky, Louisiana, Mississippi, Tennessee and Texas. Trunkline sells gas to two other interstate pipelines which in turn are authorized to sell into seven additional states.

United Gas Pipe Line Company is authorized to sell gas in Alabama, Florida, Louisiana, Mississippi, and Texas. United sells gas to six other interstate pipelines which in turn are authorized to sell gas into sixteen additional states.

Representative Richmond. Out last witness is Mr. John Buckley of the Northeast Coalition for Energy Equity. Mr. Buckley, I have to catch a 5 o'clock plane. You had better talk fast.

STATEMENT OF JOHN G. BUCKLEY, COCHAIRMAN, NORTHEAST COALITION FOR ENERGY EQUITY, WASHINGTON, D.C.

Mr. Buckley. I shall be brief. I will submit my prepared statement for the record and merely confine myself to a few oral points on those subjects that you seem to be most interested in.

We are here today as representatives of 4,000 heating oil dealers in the Northeast, many of which supply customers in your district.

We are here, just as are all these other witnesses, because we have a self-interest in the issue that you are discussing today. And you can almost predict from running many hearings, and you ran a very tight one here today, depending on how someone is doing under the current system, whether they like it or whether they don't.

We don't like it. We don't like to have to compete against a subsidized fuel. We think we are very good competitors. We have always been able to handle natural gas on the market on equal terms, but when the Government subsidizes one fuel and holds the price down and allows the other to go to the world market, it's very, very difficult to compete with that kind of a price advantage.

I would like to address one issue, particularly as it applies to your district, and you make it in your opening statement. The issue here is not whether, as Mr. Cooper puts it, prices are going to go up under decontrol. Prices are going up now under the NGPA. You note 30 percent a year. We're having an increase in the New England market on March 1 of 25 percent, which is the second increase in 6 months. The NGPA is not working. It is not protecting consumers.

Representative Richmond. What price will that bring your gas to?

Mr. Buckley. That's the Algonquian line, which buys from Transco, supplies Pennsylvania, New Jersey, and New York, but primarily supplies Massachusetts and Rhode Island.

Representative Richmond. What price will that bring it up to?

Mr. Buckley. That will bring up the price, depending on the individual marketing company, but the pipeline gas price will be an increase of $1.05 a thousand cubic feet, about $6 a barrel, 15 cents a gallon.

Now each individual marketing company has other sources, supplemental synthetic natural gas, imported LNG from Algeria, and they are proposing also buying in some from Canada.

Those are all more costly than the pipeline gas.

Representative Richmond. It is getting pretty close to the range of oil, isn't it?

Mr. Buckley. It is certainly in the area of industrial residual fuel. It's there now.

The differential on heating oil, which last winter was 60 cents a gallon, will be about 20 cents a gallon by March 1 when that new hike goes in. So that differential is disappearing. Unfortunately it is disappearing into the pockets of a relatively few people like the deep gas drillers.

Representative **Richmond**. The deep gas drillers are only producing 3 percent of the gas in the country. So no matter what they are making, they can't be making that much.

Mr. **Buckley**. Can't be making that much on it? Twenty-five percent after you payoff the entire capital investment in the well the same year you make it? What other industry can writeoff their entire capital investment in 1 year? They can, and still make a profit. And then they got 29 more years for getting that gas coming.

I would like for you to ask that company for their profit statement, not one well, but the whole statement, and see where they are.

Representative **Richmond**. I plan to do exactly that.

Mr. **Buckley**. Most members of the subcommittee have people who burn oil and who burn gas in their district, and we think it is very unfair to burden the oil heat consumer, and you have many of them, with a windfall profits tax, which in effect now gives the Federal Government 50 cents on every $1.25 the homeowner pays, and those funds in addition support low-income energy assistance, which we have fought very hard to keep and maintain and expand.

I think it is a little bit gratuitous for Mr. Lawrence to say he supports that program, because his consumers of natural gas benefit from it, but your home heating customers are the ones who are paying the bill for his gas customers. Isn't it about time we were all treated fairly by Government? And isn't it about time we were allowed to compete in the marketplace, not with a subsidized fuel, but with a fuel that we can meet on an equal basis? We just think it is terribly unfair to knock us out of business.

Sure he likes the present act. In the last 3 years the AGA members have taken 1 million of our residential customers away by conversion, and they would like nothing better than to take 2 or 3 million more before natural gas is put on the marketplace.

We don't think that is a fair way to drive us out of business, because it's Government, not their efficiency that they talk about, that can do it. We can meet them in the marketplace every day of the week. But we have our hands tied, and we just think it's unfair.

We do think it is important for you to recognize that, whether Mr. Cooper is right about the supply response or not, and you will get geologists to argue about that, we're not going to solve our supply problem in 1 year or 5 years with NGPA or with deregulation. But the fact is, once you give consumers clear signals they react, and they react with a vengeance.

The fact is that, as you will see from my prepared statement, people on natural gas are not conserving anywhere near the amount that people on oil are conserving. People on oil know they are at the world price, and they know that's something, whether they like it or not, that they are going to face, and so they have made investments to conserve. They have changed their lifestyle.

Our average home heating oil consumer in New England is today burning 45 percent less oil than in 1973.

Representative **Richmond**. What about gas consumers?

Mr. **Buckley**. Gas conservation has been about one-quarter of that amount. In the last 6 months of this winter, the Massachusetts State Energy Office just put out, the average heating oil customer this winter, with prices stable and declining, has saved another 15 percent. The three largest gas distributors in Massachusetts, in order of their price, highest price first, has saved 6 percent, 4 percent, and 1 percent. The cheapest ones were the 1 percent.

So that price driven conservation has taken this country from where we were at the brink of 50 percent of our oil use imported, brought us back 20 percent on oil use, not because of the recession, but because if you give people the right signals they buy more efficient cars and they conserve in the home and they conserve in the factories. We use energy more efficiently.

Your Audubon Society man was absolutely accurate on that point.

[The prepared statement of Mr. Buckley follows:]

PREPARED STATEMENT OF JOHN G. BUCKLEY

My name is John G. Buckley. I am Co-Chairman of the Northeast Coalition for Energy Equity, and Vice President of Northeast Petroleum Corporation, an independent fuel oil marketer based in Boston.

The Northeast Coalition for Energy Equity is an ad hoc group formed to support efforts to deregulate natural gas. The Coalition represents approximately 4,000 home heating oil marketers serving over 8 million consumers in the nine states of the Northeast.[1] The members of the Coalition have a vital interest in natural gas decontrol and related pricing issues, because they sell home heating oil at free market prices, in direct competition with utilities that sell natural gas at lower, federally subsidized prices. Many members of the Coalition also sell residual oil for industry and commercial use, also in competition with natural gas that remains under continuing federal price control.

I. Pricing Discrimination Against the Northeast

At present, northeastern consumers of both oil and gas are seriously discriminated against by federal natural gas pricing policy. Historically, this federal policy has held the price for most gas below the price of alternative fuels. But cheap gas is not available in the Northeast in any significant amounts. Historically, it has flowed almost entirely to other regions and this is likely to continue in the future. The

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[1] Attachment A is a list of the principal associations that are members of the Coalition.

Northeast uses other fuels, primarily oil, more expensive pipeline supplies, or much more expensive imported LNG or synthetic manufactured gas to heat its homes and power its industry.

The Northeast's major energy source is oil. The price for this fuel is now set by the law of supply and demand. However, because of federal policy, the national average price of gas remains substantially below its fuel oil equivalent. Thus, oil consumers in the Northeast must compete with gas users in other regions who heat their homes and run their factories with this subsidized fuel. This forces up the cost of living and doing business in the Northeast, and therefore costs the region jobs.

Even those northeastern consumers who use natural gas derive little benefit from federal gas price regulation. These gas consumers also are discriminated against by the current system of wellhead price controls because pipelines serving the Northeast have little access to "old" cheap gas, and rely for a substantial portion of their supplies on imported LNG, synthetic natural gas and, potentially, expensive Canadian imports. Since federal price regulation decreases incentives for domestic production, it forces regions at the end of the pipeline, including the Northeast and Pacific Northwest, to rely on expensive supplemental sources, and gas imports.

For example, residential gas prices in the Northeast averaged $5.99 per million Btu's in 1980, compared to a national average price of only $3.61 per million Btu's. Thus, as a result of wellhead price regulation, northeastern homeowners were paying 66 percent more than the national average price for natural gas. Similarly, the Northeast's industrial natural gas users paid from $3.14 to $4.09 per million Btu's in 1980 while industry nationally paid only $2.81 per million Btu's: a differential as high as 45 percent. In contrast, oil price differentials are never greater than 6 or 7 percent over the whole United States. These large differentials in gas prices, which are serious economic burdens to some regions and to many individuals and customers in all regions, are the direct result of federal controls on gas prices.

This large energy price advantage which federal regulation provides to certain regions and their consumers acts like a trade barrier to northeastern industry and a direct cost to northeastern consumers. It prevents products made in the Northeast from competing fairly in other regions, and provides industry in other regions with a competitive advantage over northeastern plants. It is bad national policy to guarantee lower fuel costs to some regions at the expense of others. In short, natural gas price controls subsidize some areas of the country and have a direct and serious adverse effect on the northeastern economy and on northeastern consumers.

II. Federal Natural Gas Pricing Policy: The NGPA.

The direction of federal gas pricing policy is to eliminate price controls on some natural gas in 1985. The Natural Gas Policy Act (NGPA) is based on bad public policy, because it will continue regional energy price discrimination without any justification. Under NGPA, regions like the Northeast will continue to pay the highest prices for gas. Indeed, on March 1, 1982, the price charged by one of the two major suppliers to New England will increase by about 25 percent. Thus, even with controls, natural gas prices will be as high or higher than the price of decontrolled oil in many New England markets. Gas prices are rising sharply under controls while decontrolled oil prices are dropping.

If NGPA is allowed to run its course without a major revision of old gas prices by FERC, serious problems will remain for the Northeast region after 1985. Because of the high cost of supplies available to pipelines serving the Northeast and the region's distance from the producing fields, northeastern gas consumers will get little or no benefit from post 1985 controls on old gas. Many consumers in the Pacific Northwest and, ironically, in the producing states, will share this predicament. Pipelines serving these regions will have little cheap price controlled old gas after 1985, and their consumers, like those in the Northeast, will be paying oil equivalent prices.

Some other regions or parts of regions will be luckier. Consumers in Arkansas, for example, on pipelines with "deep cushions" of old gas which will remain under control after 1985, will be major beneficiaries of the continuation of NGPA. The pipelines which serve Arkansas and a few other areas will be able to bid natural gas away from lines serving the Northeast and similar regions, which will have to be concerned about competition from oil when they bid for natural gas.

Why does the prospect of regional discrimination against gas users in the Northeast, Pacific Northwest, and Southwest, concern oil marketers in the Northeast? Because we have been forced to compete with federally subsidized fuels for too long, and we believe the dislocations inherent in NGPA could lead to the extension or reimposition of controls. Moreover, any continuation of controls will not protect gas consumers in the Northeast, and will perpetuate the discrimination against oil consumers and the Northeast regional economy.

III. Reasons for Favoring Accelerated Phased Decontrol.

Under the modifications to current law being discussed by the Department of Energy (DOE) and the Federal Energy Regulatory Commission (FERC), all natural gas prices would rise to market clearing levels more uniformly and smoothly than under NGPA. Even *re*regulation of natural gas prices after the expiration of NGPA in 1985 will not prevent the rapid increases in natural gas prices now taking place. But, as we learned in the 1970's, reregulation after 1985 would create shortages, uncertainty, and dislocations. Only a few natural gas consumers and producers are winners in this game. If shortages and regional inequity are to be avoided, all natural gas prices must be deregulated after 1985.

Under NGPA, natural gas prices in all parts of the country are rising substantially, but regulation continues until January 1, 1985. On that date, prices of decontrolled gas will "fly up" suddenly and dramatically, to heights many analysts say will exceed free market levels. This "fly up" will create major inequities between regions, and obviously will result in a shock to some consumers. These dislocations might lead to recontrol of gas prices, and a continued disadvantage to our businesses and our region. This is one of the Northeast Coalition's principal concerns.

Congress has an opportunity to smooth the transition to gas decontrol, and should begin this job immediately. If Congress provides the mid-course correction to NGPA needed to assure such a transition, it can prevent the price shock of January 1, 1985. In addition, a correction now will help northeastern consumers in several other significant ways:

First, the energy price disparity between the Northeast and other regions will be eliminated more quickly;

Second, the likelihood of gas shortages in the Northeast and elsewhere before 1985 will be significantly reduced, because of increased gas production and substantially more conservation of gas;

Third, the increased availability of natural gas will result in a decrese of oil and gas imports by 500,000 to 1,000,000 barrels per day and consequently will increase the downward pressures on the world price of oil;

Fourth, this oil "backout" will result in lower prices for consumers of petroleum products; and

Fifth, the low income energy assistance program, which now provides $1.8 billion nationally, can be expanded to accommodate all of the low income oil and gas consumers who need time to adjust to free market energy prices of the 1980's. This expansion could be funded from increased corporate taxes collected from natural gas producers.

IV. Program of the Northeast Coalition for Energy Equity.

Because of our concern that continued NGPA regulation and the possibility of extended regulation will seriously injure our businesses and the region we serve, the Northeast Coalition enlisted early in the fight to phase out natural gas price controls.

The Coalition has engaged independent experts to explore a number of issue areas relating to natural gas price controls which may be of interest to members of this Committee.

First, the Coalition has asked independent researchers at the Kennedy School of Government at Harvard to look into the regional impacts of gas price controls. These Harvard studies will show, we believe, that natural gas price controls make it harder for businesses in the Northeast which use oil to compete with plants using gas in other regions. The studies may suggest that this is one of the reasons why wages in the Northeast have been falling relative to those in other regions. If energy costs are high, firms must have lower costs in other areas, for example wages, to continue to compete. Working people in the Northeast are thus paying doubly for gas price controls: They pay the world price for oil to heat their homes and they receive lower wages so their employers can compete.

The Harvard studies also will examine the regional fund flows which would result from deregulation. A study by the Federal Reserve Bank of Minneapolis suggests that consuming regions do not lose all of the money paid for domestic energy. A large share of payments either stay in the consuming regions as payments to distributing companies, or investment capital for new tools and equipment, or return to the consuming regions as payments to stock and bond holders, or government payments out of tax receipts or programs. We believe on this basis that the Harvard study will show that the Northeast would actually gain -- perhaps as much as $500 million to $1 billion per year -- from the fund flows after natural gas deregulation.

The Northeast Coalition has just released another independent study by residential conservation experts at Oak Ridge, Tennessee. It shows that conservation in oil heated homes is running 18 to 32 percent ahead of conservation in comparable gas heated homes. If residential natural gas prices rise to an average of only 90 percent of heating oil prices, the study suggests that conservation will free up as much as 1 trillion cubic feet of natural gas per year. 2/ This gas, of course, would be available to replace oil in many industrial uses, and to reduce imports by as much as 500,000 barrels per day.

Another study soon to be released by the Coalition will underscore the environmental benefits of decontrolling natural

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2/ The study, entitled "Analysis of Household Primary Heating Fuel Consumption: Natural Gas and Oil" by DOE analysts Eric Hirst and John Trimble of Oak Ridge, Tennessee concuded:

> "..... Raising the price of natural gas from its 1978 value of $2.75/MBtu to 90% of the May 1981 price of fuel oil ($6.00/MBtu) would cut gas use by 30-45 MBtu (22-32%). If the natural gas price increased to 100% of the May 1981 price of fuel oil ($6.60/MBtu), then consumption would drop by 35-50 MBtu/year (27-38%). In other words, if decontrol of natural gas prices led to an increase in the average residential gas price to 90% of the average price of fuel oil, gas use (within a couple of years) in gas-heated homes would be cut by 22-32%, based on the regression equations developed here. In the long-run, as households respond to higher gas prices by improving the thermal performance of their structures, increasing the efficiency of their gas-burning equipment, and/or switching to other fuels, gas use might decline even more."

gas. By encouraging conservation, decontrol will make natural gas available for many industrial uses. The gains in terms of clean air would be substantial.

The Coalition has commissioned both Data Resources Inc., and the Madision Consulting Group to do macroeconomic analyses of the impacts of natural gas price decontrol. One of the most important results of these studies has been a series of estimates of the federal revenue potential of natural gas price decontrol, with or without a windfall profits tax. With such a tax revenues over four years from decontrol could exceed $75 billion. Even without a new tax, increased revenues over this period might go as high as $40 billion.

Finally, members of the Northeast Coalition have long been associated with efforts to provide an adequate level of low income energy assistance to families for whom energy price increases have become a serious burden. We have, therefore, commissioned a major study which suggests a significant expansion of low income energy assistance is necessary to help the poor pay rising natural gas costs, regardless of any acceleration of decontrol.

All of these studies should be of major interest to this Committee and we will make those which are not yet completed available to you as soon as they are ready. We would welcome the Committee's active investigation of any of the points we made, and particularly our conclusion that gas regulation discriminates seriously against firms and consumers in regions like the Northeast.

CONCLUSION

If Congress fails to modify NGPA, natural gas prices will continue to increase significantly,[3] but the substantial benefits of legislative correction will be lost. If Congress acts, the distortions and dislocations in the NGPA will be avoided and the nation's consumers, particularly consumers in the Northeast, Northwest, and Southwest would be far better off than under existing law.

3/ Even the New England Gas Association predicts that retail gas prices in New England will be only moderately higher under a new three year phased decontrol bill than under NGPA. This study, performed by Foster Associates, concluded that gas prices would be 15 percent higher in 1983, 18 percent higher in 1984, 9.8 percent higher in 1985, and 7.4 percent higher in 1986. However, the Northeast Coalition believes the difference will be less, because the study failed to consider possible price increases by the Federal Energy Regulatory Commission under NGPA; it did not account for any increase in conservation under decontrol; and it assumed a three percent annual increase in the price of oil, which raised the estimated gas prices under decontrol.

Attachment A

DESCRIPTION OF MEMBERS OF NORTHEAST COALITION FOR ENERGY EQUITY

New England Fuel Institute

The association of independent fuel oil marketers in the six state New England region.

Empire State Petroleum Association -

The association of independent home heating oil marketers and gasoline jobbers in New York state.

Pennsylvania Petroleum Association -

The association of independent home heating oil marketers in Pennsylvania.

Fuel Merchants Association of New Jersey -

The association of independent home heating oil marketers in New Jersey.

Independent Fuel Terminal Operators Association -

The association of independent firms which operate deepwater fuel terminals on the East Coast, from Maine to Florida.

Coal Oil Producers Association -

An association of firms engaged in the development and commercialization of coal oil mixtures to replace industrial and utility fuel oil.

Representative **Richmond**. Mr. Buckley, thank you for your testimony, and I will certainly look forward to reading your entire prepared statement. Thank you very much for coming and for your patience in waiting all afternoon.

Mr. **Buckley**. Thank you.

Representative **Richmond**. Thank you to the audience. The subcommittee stands adjourned.

[Whereupon, at 4:30 p.m., the subcommittee adjourned, subject to the call of the Chair.]

[The following information was subsequently supplied for the record:]

STATEMENT OF THE CHEMICAL MANUFACTURERS ASSOCIATION

EXECUTIVE SUMMARY

At the request of the Chemical Manufacturers Association, Foster Associates has analyzed ten recent studies dealing directly or indirectly with ultimate (phased or immediate) total decontrol of natural gas prices. The table on the last three pages of this Summary provides a brief synopsis of the ten studies. This Summary evaluates the implications and key results of these studies with respect to the impact of phased total decontrol on gas prices, gas supply and the U.S. economy.

The ten studies present differing opinions concerning the impact of decontrol. They also vary in terms of apparent purpose, depth, levels of sophistication, and scope. More importantly, the studies vary widely in their treatment of gas prices under Natural Gas Policy Act (NGPA) as compared to ultimate (phased or immediate) total decontrol. These assumptions or predictions largely influence the findings of the studies in terms of impact on consumers, GNP, employment, and inflation. For example, a study based on very low price predictions under NGPA compared with very high price predictions under phased total decontrol price leads to a projection of a very high incremental cost in the case of total decontrol. A large increase in inflation would naturally result.

Of the ten studies, two are decidedly more comprehensive and, although different in important ways, represent the most realistic assessments. The two studies are "A Study of Alternatives to the Natural Gas Policy Act of 1978," DOE Office of Policy Planning and Analysis (OPPA), and "A Series of Papers on Decontrol of Natural Gas Prices," Standard Oil of Indiana (Amoco). These two studies show substantial economic benefits to the Nation arising from phased total decontrol, despite the fact that the two perceive the problems of NGPA much differently.

Three other studies differ markedly with OPPA and Amoco on the benefits of phased total decontrol. The three are: "Consumer Impact of Indefinite Gas Price Escalator Clauses Under Alternative Decontrol Plans," American Gas Association [AGA (November)]; "Bleak Harvest: The Impact of Natural Gas Decontrol on American Farms," Citizen/Labor Energy Coalition (Bleak Harvest); and "The Decontrol of Natural Gas Prices, a Price Americans Can't Afford," Energy Action (Energy Action). These three predict unrealistically high retail gas prices without considering the benefits of higher prices. In large measure, the findings of these three studies result from exaggerated and unsupportable field price projections and hence contribute little to a rational analysis of the decontrol issue.

Four of the remaining five studies generally support the conclusions of the OPPA and Amoco studies in regard to the benefits of total decontrol. The fifth, another AGA study (April) only addresses immediate total decontrol and focuses on its impact on low income gas users. The AGA (April) study assumes much lower decontrolled gas prices than the AGA (November) study, but presumably AGA's position on decontrol is the same.

All the studies indicate the obvious: earlier decontrol will raise gas prices faster than NGPA in the near term. More importantly, the studies indicate a number of problems with the phased partial decontrol scheduled by NGPA, which a number of the studies indicate could be eliminated by phased total decontrol. The extent of the problems with NGPA differ among the studies, but some of the problems include:

- "Fly Up" -- a price of decontrolled gas above market value due to the existence of below market priced (controlled) gas
- Regional pricing disparities -- unequal distribution of low and high priced gas
- Inefficient resource allocation arising from a panoply of NGPA price categories
- Price "spike" in 1985 -- a large sudden increase in gas prices as significant quantities of gas are decontrolled

In general, review of the analysis underlying the ten studies permits several reasonable inferences to be drawn in regard to the benefits and costs of phased total decontrol compared to NGPA.

- Reduction of regional pricing disparities
- Enhanced gas supply (e.g., as much as a 9 percent in Lower 48 production)
- Improved resource allocation
- Reduced energy imports (e.g., 600 MBD)
- Increased GNP in the long term
- Moderately negative to neutral impact (depending on extent and duration of phasing) on near term GNP and employment (e.g., a 0.1 to 0.2 percent point increase in unemployment)
- An earlier increase in inflation offset by a later decrease in inflation

- Higher gas prices in most gas markets at least through 1984 (e.g., a 12 to 17 percent increase in residential rates during the first year)

Review of the studies leads to the conclusion that there are major long-run national economic benefits to be gained from phased total decontrol that outweigh potential adverse repercussions. Therefore, the national debate should not be whether decontrol will improve economic efficiency but rather which phased decontrol scenario provides the best combination of economic efficiency and macroeconomic impact. As stated by the Cabinet Council

> The basic tradeoff among these options is between the magnitude of the first year consumer impact and the size of the efficiency gains. In general, smaller price increases also lead to smaller efficiency gains and vice versa.

A. Gas Prices

There are many uncertainties with respect to future price levels under NGPA or phased total decontrol. A key factor pertaining to NGPA partial decontrol is the amount of fly up, or the extent to which decontrolled gas prices will exceed market clearing levels in 1985 due to the existence of low priced gas. In other words, how high will decontrolled gas prices rise under partial decontrol.

OPPA and Amoco differ on fly up under NGPA, but each represents a plausible boundary on the subject. OPPA projects maximum realistic fly up; Amoco projects minimal realistic fly up. Aside from the fly up issue, of the two studies OPPA provides a more comprehensive and detailed review of NGPA pricing for NGPA categories other than decontrolled gas. The two studies in conjunction may be assumed to represent the range of plausible gas prices in the field and delivered to consumers under NGPA and phased total decontrol. Thus, the table on the following page compares the Amoco and OPPA projections of gas prices under NGPA.

A review of this table yields a number of conclusions. First, there will be significant gas price increases under NGPA. For residential users, OPPA projects a 53 percent real increase between 1982 and 1985, while Amoco projects a 48 percent increase. Most of this increase occurs in 1985, the first year of decontrol of most new gas. Between 1985 and 1990, OPPA projects an increase of 12 percent and Amoco projects an increase of 28 percent in residential gas prices under NGPA. Thus, both show a large real increase in gas prices for 1985 under NGPA, moderating thereafter.

The impact of phased total decontrol on gas prices is also shown on the table. Due to the presumed level of fly up under NGPA, OPPA shows very little difference between phased total decontrol and NGPA in 1985 and beyond. Amoco, with little fly up projected for NGPA, shows higher price increases under phased total decontrol.

It should be noted that the projected percentage increase in field prices received by producers is higher than the increase in prices paid by residential users. This is due to substantial fixed transportation and distribution costs involved in delivering gas to residential users. Moreover, both these studies project partially offsetting benefits to consumers by virtue of reduced imported gas supply or prices.

The table illustrates the plausible limits of the impact of decontrol, partial and phased total. The two studies differed markedly in major assumptions and projections concerning gas prices. Notwithstanding these dif-

Table 1

PROJECTED PRICES UNDER NGPA
(1981 Dollars per Mcf)

	1982	1985	1990
	(1)	(2)	(3)
A. NGPA			
Average Field Prices			
OPPA	$2.47	$4.85	$5.83
Amoco	2.05	3.90	5.25
Average Residential Prices			
OPPA	4.70	7.18	8.02
Amoco	4.50	6.65	8.50
B. Phased Total Decontrol			
Average Field Prices			
OPPA	3.33	5.11	6.00
Amoco	2.60	5.40	6.80
Average Residential Prices			
OPPA	5.52	7.26	8.18
Amoco	5.05	7.70	9.45
C. Percentage Real Increases In Prices Under Total Decontrol Over NGPA			
Average Field Prices			
OPPA	35%	5%	1%
Amoco	27	38	30
Average Residential Prices			
OPPA	17	1	2
Amoco	12	16	11

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ferences, both studies reached the conclusion that total decontrol was in the national interest.

Gas prices represent the first step in the complex economic process of adjusting to decontrol. A related consideration in evaluating decontrol is the impact on gas supply, discussed next.

B. The Relationship Between Gas Supply and Price

Only five of the studies analyzed here address the relationship between domestic gas supply and price. Of the five, three indicate a positive response, one shows no change in Lower 48 production, and the fifth expects a short-run positive response and a long-run negative response.

Amoco projects a significant increase in Lower 48 production under phased total decontrol compared to NGPA, starting immediately and gaining momentum through 1990. AGA (April) finds that during the first five years of total decontrol, there would be more potential flowing new onshore gas than under NGPA. However, these potential increases were not realized due to AGA's projected drop in gas demand. Likewise, the Energy Information Agency (EIA) study, which only goes to 1985, projects an increase in Lower 48 supply under immediate total decontrol, compared with NGPA. It can reasonably be inferred that under phased total decontrol these latter two studies would also project an increased supply response.

On the other hand, Energy Action argues that controlled prices are sufficient "to encourage exploration by most companies." Thus, Energy Action projects no difference in Lower 48 production under all decontrol scenarios. The commentary by Energy Action ignores the obvious -- higher prices will encourage more exploration and development by all companies. This is fundamental economics.

OPPA projects that under phased total decontrol, Lower 48 gas supply would be higher in the short run but lower after 1985. This result reflects the fact that OPPA's supply model is driven by new gas prices only. Since OPPA projects higher decontrolled new gas prices under NGPA than total decontrol, less gas is the result. Moreover, OPPA does not take into account the impact of changes in old gas prices on enhanced gas recovery.

Amoco's results are more consistent with views long expressed by other analysts of natural gas supply economics. It is reasonable to expect a greater increase in domestic gas supply under phased total decontrol than under partial decontrol. For example, higher old gas prices would provide incentives for increased recovery from known reserves as well as greater cash flow for investment in drilling and exploration. Additionally, since NGPA does not decontrol all new gas, total decontrol would provide additional incentives for the development of additional categories of new gas.

Both Amoco and OPPA agree that greater gas supply would be available to high priority users under total decontrol. Total decontrol would eliminate artificial gas demand, leaving more gas for high value uses. However, Amoco stresses the supply side and OPPA the demand side.

Since the precise amount of increased gas supply under phased total decontrol is subject to some uncertainty, the economic consequences of gas decontrol are likely to fall in the range of OPPA and Amoco results. The economic consequences of phased total decontrol versus NGPA are discussed next.

C. Macroeconomic Impacts

Among the studies which measure the macroeconomic impacts of phased total decontrol, there is general agreement that macroeconomic models are inadequate to measure the benefits of microeconomic changes. Hence, results should be viewed as imprecise. Decontrol will yield efficiency gains which will benefit the Nation as a whole, but macroeconomic models are not well suited to assess these gains.

All the studies which provide quantitative estimates indicate overall long run increases in GNP, employment, and Federal, state and local tax receipts. With the exception of Amoco, the studies which provide quantitative estimates also recognized that short term negative impacts might first result, but then would be outweighed by long run positive impacts. Amoco projects immediate increases in the economic benefits for the Nation under phased total decontrol.

Conversely, the Energy Action study suggests dire economic consequences of decontrol, but did not provide estimates on unemployment or drop in GNP. It appears that Energy Action considers the transfer of funds as a complete loss to the economy. Obviously it is not; hence, Energy Action's forecasts of the negative economic effects of phased total decontrol are without merit.

The studies are unanimous that phased total decontrol would initially increase measured inflation compared to NGPA, but after the initial impact, the rate of increase in inflation would be less than NGPA. Any differences are essentially matters of timing and the extent of initial impacts. Table II below shows the estimates on measured inflation.

Table II

COMPARISON OF ESTIMATES OF THE IMPACT OF PHASED DECONTROL ON INFLATION

(Percentage Point Difference in
Year to Year Change from NGPA)

	ESTIMATE			
Year (1)	OPPA (2)	Energy Action (3)	Amoco (4)	Loury (5)
1981	NA	2.43	0.3/per year	0.07
1982	0.2	(0.11)		0.26
1983	0.8	(0.01)		0.44
1984	0.8	0.02		0.54
1985	(0.9)	(1.86)		NA
1986	(0.7)	NA	NA	NA
1987	(0.1)	NA	NA	NA
1988	(0.1)	NA	NA	NA
1989	0.0	NA	NA	NA
1990	0.0	NA	NA	NA

NOTE: A positive number indicates an increase in inflation compared with NGPA and *vice versa*.

The initial impact on inflation is not that substantial, aside from the projection by Energy Action which is based on unrealistic assumptions on gas prices. The studies agree that under NGPA or phased total decontrol, there will be a small increase in measured inflation with the only difference between the two decontrol options essentially one of timing.

Only Amoco and OPPA project the impact of phased total decontrol on energy imports. In Table III, Amoco projects much higher savings based on the anticipated higher domestic gas supply response as well as the fact that higher gas prices will also increase domestic oil production. Based upon the ultimate negative gas supply response under total decontrol, OPPA projects a small increase in oil imports beginning in 1990.

Table III

COMPARISON OF THE EFFECT OF PHASED DECONTROL
ON ENERGY IMPORTS; NET CHANGE FROM NGPA
(Thousands of Barrels per Day)

	OPPA	Amoco
1982-1985	636	575
1986-1990	91	1,050

Thus, for the first few years, the two agree that the savings would be approximately 600 MBD. At current oil prices, this is worth nearly $8 billion per year. An average of the two projections for the period 1986 to 1990 would yield approximately the same savings.

D. Synopsis of Individual Studies: The Impact of Ultimate Total Decontrol Versus NGPA

SYNOPSIS OF INDIVIDUAL STUDIES:
THE IMPACT OF ULTIMATE TOTAL DECONTROL VERSUS NGPA

Study	Major Conclusions	Evaluation
Cabinet Council on Natural Resources and Environment, "Natural Gas Deregulation" (Cabinet Council)	Phasing in deregulation with a broad definition of "new gas" and a high target price for "old gas" will result in higher gas price increases and greater national efficiency gains.	Policy oriented, states crux of issue as tradeoff between higher gas prices in short run and national efficiency gains.
DOE, Office of Policy Planning and Analysis, "A Study of Alternatives to the Natural Gas Policy Act of 1978" (OPPA)	Phased total decontrol will yield $19 billion in national efficiency gains compared with NGPA. Short run macroeconomic consequences on inflation, GNP, and employment outweighed by long-run benefits. Cites infirmities of NGPA — fly up, regional pricing disparities and possibility of extended regulation, the worst case of all.	Most comprehensive and well documented of ten studies; generally reasonable results given assumptions. Assumes the maximum realistic fly up under NGPA; projects ultimate total decontrol eliminates fly up. Underestimates overall national efficiency benefits of ultimate total decontrol largely because gas supply respons is understated and fly up under NGPA might be overstated.
DOE, EIA, "Analysis of Economic Effects of Accelerated Deregulation of Natural Gas Prices," Prepublication Draft (EIA)	Decontrol of old and new gas in 1982 will decrease GNP in 1982 and 1983 and increase GNP thereafter; decrease oil and gas imports throughout the period; and would cause an increase in household expenditures for gas 1982-1984 but decreased household expenditures for gas in 1985. Did not project phased total decontrol.	Results generally appear reasonabl falling in the range of OPPA and Amoco results. However, shows gas prices under immediate total decontrol to be lower than NGPA, in 1985 without explaining why. Lack of documentation in draft renders evaluation difficult.
AGA, "Consumer Impact of Indefinite Gas Price Escalator Clauses Under Alternative Decontrol Plans" [AGA (November)]	Assumed decontrolled gas prices at 110% of distillate applicable to nearly all decontrolled gas under NGPA and 60% of all gas under phased total decontrol with the remainder at 70% of crude. Thus projects that wellhead gas prices under NGPA would rise 51% from 1984 to 1985 in real terms ($3.68 to $5.56/MMBtu); under phased total decontrol wellhead gas prices would rise 64% from 1984 to 1985 ($4.22 to $6.93). Projects little difference after 1987.	Questionable basis for major assumptions. Illustrates, albeit in an exaggerated fashion, the potential fly up problem under NGPA. Loses credibility in stretching its case to phased total decontrol.

SYNOPSIS OF INDIVIDUAL STUDIES:
THE IMPACT OF ULTIMATE TOTAL DECONTROL VERSUS NGPA

Study	Major Conclusions	Evaluation
AGA, "Cost of Immediate Total Wellhead Price Decontrol of Natural Gas to Low Income and Disadvantaged Groups" [AGA (April)]	Immediate total decontrol would produce a large adverse impact on the Nation and on low income groups in particular. The inflation rate would be increased appreciably, demand for gas would drop considerably, and imports of oil would increase. Did not address phased total decontrol.	Much lower decontrolled prices than November study; shows large price increase under immediate total decontrol. Under NGPA and immediate total decontrol, tied decontrolled gas prices to residual fuel oil prices less transportation.
Citizen/Labor Energy Coalition, "Bleak Harvest: The Impact of Natural Gas Decontrol on American Farms" (Bleak Harvest)	The farming industry would be devastated by accelerated decontrol. Fertilizer prices and other production costs would rise dramatically; heating costs would nearly double; electricity prices would rise sharply in Texas, Oklahoma, California and Kansas.	Results based upon unreasonably high prices of decontrolled gas; wholly ignores intrastate situation in projecting fertilizer prices and impact on electricity.
Energy Action, "The Decontrol of Natural Gas Prices, A Price Americans Can't Afford" (Energy Action)	Summary results generally compare different decontrol scenarios (including NGPA) with continued regulations. Shows huge dollar impact on consumers. Cites no advantages to decontrol. Projects that decontrol will increase unemployment, inflation and result in productivity declines.	Dramatically overstates price effects and macroeconomic consequences even under their price projections. Equates gas prices with somewhat high crude oil projections, and assumes very low regulated prices, so shows large near term price effect. Erroneously assumes transfer of funds resulting from higher prices is lost to the economy.
Glen Loury, "An Analysis of the Efficiency and Inflationary Impact of the Decontrol of Natural Gas Prices," (Loury)	Decontrol would increase inflation initially and cause income redistribution between producers and consumers, but the benefits of increased economic efficiency and reduced dependence on imported oil would outweigh the costs.	Theoretically sound, but gas prices under all decontrol scenarios through 1984 seem unrealistically low.

SYNOPSIS OF INDIVIDUAL STUDIES:
THE IMPACT OF ULTIMATE TOTAL DECONTROL VERSUS NGPA

Study	Major Conclusions	Evaluation
Amoco, "A Series of Papers on Decontrol of Gas Prices" (Amoco)	Ultimate total decontrol would result in increased gas and oil production, increased efficiency in transportation and distribution, decreased oil and gas imports, and an overall improvement in the U.S. energy balance. Projects immediate and substantial price impacts on GNP and employment. Assumes decontrolled gas prices to be equivalent to residual fuel oil netted back to the field under all decontrol cases.	Sensible approach to assessing long run national benefits and only study to adequately reflect economics of gas production and the response of gas supply to higher prices. Assumes no fly up under NGPA, so may overstate short run impact of total decontrol on gas prices. Only study to show immediate positive impact of decontrol on GNP and employmen which appears unlikely. However, longer run estimates appear reasonable in light of projected gas supply response.
Mellon Institute, "Eight Great Energy Myths, The Least Cost Strategy." (Mellon)	Study did not address decontrol per se. Due primarily to interfuel competition, states that the price of gas will not rise to oil equivalency upon decontrol.	Does not project gas prices; rather discusses possibilities if gas prices were to reach oil equivalency at retail and concludes that gas prices could not without reducing demand and there fore would not.

STATEMENT OF THE NATURAL GAS SUPPLY ASSOCIATION

(The Natural Gas Supply Association is a group of major and independent producers of natural gas who market almost 90 percent of the gas produced in the United States. The Association does not represent pipelines or distribution utilities.)

The previous administration effectively wrote off natural gas as a major contributor to the nation's future energy mix, claiming that the resource was so close to exhaustion that national policy should concern itself with demand management and forced conservation. Because of the perceived inability of the gas producing industry to respond substantially to incentive pricing at the wellhead, the National Energy Acts of 1978 provided for future limited decontrol of limited quantities of natural gas, increased regulation of natural gas, and massive intervention in natural gas marketing through incremental pricing and contraints on industrial gas usage. We abandoned our common sense in 1978 when we accepted as a working premise for legislative policy the unfounded conclusion that natural gas was a resource with a future, and that accordingly the national interest would be served by the imposition of greater regulation on the natural gas industry. These false premises led to flawed legislation.

There is more natural gas potentially available to this country in the future than this county has found, produced and consumed in its entire history. According to the U.S. Geological Survey, there remains a total resource potential of over 730 trillion cubic feet of natural gas. This is an estimate and it can only be an estimate because of the vast proportion of our sedimentary basins which have not been explored at all.

We should never again write off this enormous natural gas resource base in determining national energy policy, but neither should common sense let us err in setting our policy without a realization that natural gas potential can become proved natural gas reserves only if free market incentives are permitted to provide an economic climate conducive to sustained drilling and production activities.

Our common sense should impel us to search for a natural gas policy which recognizes, reasonably and objectively, the simple fact that we have the potential for supplying much of the energy needs of our economy for many years to come through natural gas, if we provide the political and economic tools to make physical development a reality.

<ins>Reserves Tilt</ins>. While gas well drilling reflected a sharp surge during the decade of the '70s in response to increased economic incentives, reserves estimates indicated we

were still depleting our natural gas inventory, consuming gas more rapidly than we can develop replacement stock.

There has been a dramatic increase in the share of reserve additions from gas found in association with oil. It appears that increased oil drilling - not gas drilling - is largely responsible for recent improvements in gas reserve additions. According to the Department of Energy, reserve additions of natural gas found in association with oil increased more than 200 percent between 1977 and 1980. Reserve additions of gas not found in association with oil have been declining.

Natural Gas Reserve Additions
Associated versus Non-Associated Additions
(Billion Cubic Feet)

	Associated	Non-Associated
1977	1,583	11,395
1978	1,813	15,183
1979	1,904	13,121
1980	4,937	11,234

Department of Energy Estimates

In 1977, about 7 times as much non-associated gas was added to our reserves as compared to associated gas. But in 1980 -- the last year for which figures are available -- non-associated gas contributed only a little more than two times as much additional supply as associated gas. Non-associated gas production declined 3 percent while associated production remained constant.

Over the previous two years, oil drilling has increased at an average rate of 39 percent, gas well drilling over the same period of time, increased at an average rate of only 10 percent.

Drilling Distortions Caused by NGPA. The pricing artificialities of the NGPA also produce gross distortions in the manner in which the producing industry allocates its capital and manpower resources in the search for the development of our natural gas resource base. This misallocation adversely affects available supplies of natural gas. First, NGPA provides little meaningful incentive for the producer to allocate available capital to maximize production in already existing gas producing areas, or to prevent premature abandonment of marginal properties because so-called "old gas" remains price controlled in perpetuity at artifically low levels. Thus, NGPA encourages inefficiency in production of proved reserves. The FERC special relief provisions and the stripper gas provisions of Section 108 of the NGPA are inadequate to remedy the problem. Second, NGPA gives unequal economic weight to alternate new gas drilling opportunities. Under the NGPA a gas well having a completion location below 15,000 feet produces gas which is not subject to federal wellhead ceiling prices. The current market for natural gas in this high-cost, high-risk category is in some areas as high as $10.00 per million BTU's at the wellhead because the pipeline purchaser can "roll in" these prices with all other gas purchases. Under the NGPA, if the producer's well is bottomed at a completion location above 15,000 feet, the gas produced from the well is subject to the complex pricing regulations of the NGPA, with an applicable ceiling price generally no greater than $2.00-$3.00 per million BTU's. Yet, according to estimates of the Potential Gas Committee at the Colorado School of Mines, there may be twice as much recoverable natural gas at depths less than 15,000 feet deep onshore and in water less than 200 meters deep offshore than is the case below 15,000 feet.

The NGPA has thus created a situation where drilling capital is directed to the high cost, high risk range below 15,000 feet, and to oil production at any depth, because of the obvious relative economic discentive of spending the same drilling dollar to seek natural gas at depths less than 15,000 feet.

Drilling statistics compiled by the American Petroleum Institute demonstrate that the Natural Gas Policy Act distorts drilling behavior.

A comparison of wells drilled by depth indicate a declining rate of increase between 0 to 15,000 feet. Although drilling is more expensive as one goes deeper, the large increase in drilling below 15,000 feet is attributed to current gas pricing policy.

TOTAL GAS WELLS DRILLED

Depth (feet)	1980	1981	Change
0-5000	8944	10388	16%
5,000-10,000	4733	5246	11%
10,000-15,000	1731	1758	1%
15,000 & Below	322	428	33%

Annual Summary of Drilling Statistics, API, March 19,1982

The perverse incentives of Title I are encouraging producers to explore for easily recoverable shallow gas or very expensive deep gas while neglecting the development of resources at intermediate depths.

Exploratory drilling at near deep levels show that in 1981 the number of gas wells drilled between 10,000 to 15,000 feet declined 5% while exploratory deep drilling increased 44 percent.

EXPLORATORY NEAR DEEP AND DEEP GAS WELLS

Depth (feet)	1980	1981	Change
10,000-15,000	360	342	-5%
15,000 & Below	109	157	44%

Annual Summary of Drilling Statistics, API, March 19, 1982

Market Disorder. A very important reason for immediate legislative reform of the NGPA lies in the chaos which will be created in 1985 if the NGPA structure is left unchanged. In 1985, certain categories of gas will move out from under wellhead price controls, while other categories of gas will remain subject to the restrictive pricing formulae mandated by the NGPA. The price disparity in 1985 between different classifications of natural gas -- which are meaningless to the consumer who receives the same commodity from a price-regulated well as he receives from a deregulated well -- will be enormous, and will tend to diverge further over time as deregulated natural gas prices are affected by other uncontrolled energy sources, while regulated prices remain relatively constant under the NGPA pricing formulae. This price disparity promises at least two areas of bitter conflict in 1985 and beyond.

First is the issue of differential pricing to consumers. In 1985, just as is true today, lower-cost regulated natural gas and higher-cost unregulated natural gas will be produced in different regions by different producers, purchased by different pipelines -- both interstate and intrastate -- and transported to different regions of the country for use by different consumers. Some producers will have more low cost gas on the market than other producers; some pipelines will have substantial supplies of low cost gas or a deep cushion, other pipelines will have little of this supply or a shallow cushion and some users will receive the benefit of more low cost gas than other users. Thus, those industrial firms which are the beneficiaries of low cost natural gas will derive a substantial competitive advantage over rival concerns which are forced by the vicissitudes of the market into purchasing higher-cost gas. In short, the pressure for some form of "entitlements" program to equalize natural gas costs among purchasers may become irresistible, as the pressure became irresistible for an entitlements program for crude oil purchasers once a two-tier crude oil pricing structure was created.

Second is the issue of access to new supplies of natural gas. For natural gas coming out from under NGPA price controls, as well as natural gas newly found after

1985, a premium price can be offered by some, but not all, pipeline purchasers. Those pipeline companies having committed to their systems a long term supply of low cost, permanently regulated natural gas will be able to offer above-market prices for new gas supplies for, since pipelines average all purchased gas costs together in determining their resale rates. A pipeline having a cushion of low cost gas can bid premium prices for new supplies without raising its average cost above competing fuels. The extent of the pipeline low cost gas cushion varies from company to company, but clearly those pipelines with a deep cushion will be in a position to out-bid those pipelines without a cushion, and thereby command virtually all new gas supplies entering the market after 1985. Unequal purchasing power, created by the inherent subsidy of low cost regulated gas, will continue until such time as the cushion has been dissipated by continual averaging-up of the cost of purchased gas. This competitive advantage in the procurement of new supplies of natural gas by some pipelines can produce severe strains on the abilities of those pipeline purchasers not able to compete for new supply increments to meet their system needs. These strains might also fall upon the customers served by those disadvantaged pipelines.

Currently, many intrastate pipelines are complaining because of the relative difference of gas cost with interstate pipelines.

Interstate pipelines also show a considerable disparity in system supply prices. As a result of the range in costs (See Appendix I) certain industries in certain regions will have a cost advantage on their fuel. This phenomena will not only occur interegionally but manufacturers in the same region, and even the same state will benefit or bear the burden of the supply position of their pipeline.

To the extent that those industries, such as food, textile, paper, chemical, petroleum, stone, clay, glass, etc., primary metals, fabricated metals, machinery and transport equipment, find natural gas essential for process and feedstock use are located on shallow cushion pipelines, they may face shortages prior to 1985 if the NGPA is allowed to run its course.

Discussion of Deregulation. Representatives of some consumer groups have argued that the impact of natural gas decontrol would be disastrous. These groups made the same claim in their opposition to oil decontrol. The actual situation which developed after oil was decontrolled was exactly opposite of what these groups projected.

As a nation we have only recently recognized that price controls on oil were wrong because they encouraged consumption, reduced domestic production, increased imports, and hid the real cost of oil from the American people. Price controls on natural gas are just as wrong for the same reasons. By freeing domestic oil production, the Reagan

Administration expedited a program begun under the Carter administration which was designed to open the door for further exploration and development of additional domestic supplies. Recent experience with the removal of price controls on oil has demonstrated that a free market does respond. In response to rising crude oil prices under phased decontrol and the expectation of complete decontrol in 1981, virtually every oil drilling record was broken in 1980. Drilling activity increased at an even faster rate in 1981. In addition, crude oil decontrol has brought about reduction in imports and has increased conservation. Americans are now witnessing the inability of OPEC to sustain higher prices and are experiencing price reduction at the gasoline pump.

The Citizen/Labor Energy Coalition and Energy Action have purported to assess the future economic effects of natural gas decontrol. A review of these studies by Foster Associates for the Chemical Manufacturers Association finds that these reports are wrong in their facts and assumptions. We concur.

The CLEC and Energy Action reports are erroneous in three basic ways. First, they inflate estimates of future natural gas prices under decontrol to arrive at groundless "scare" conclusions. High price estimates are based on several flawed assumptions about oil and natural gas markets. These are:

- That natural gas prices would rise under decontrol to equal *crude* oil prices -- rather than to the lower levels of competition of alternative fuels such as residual fuel oil.

- That crude oil prices would necessarily increase rapidly in the future.

Second, the CLEC and Energy Action reports ignore factors which *restrain* gas price increases to consumers under decontrol. They implicitly assume:

- That the provisions in *long-term contracts* would not effect gas price increases.
- That the incremental increase in residential prices would match those of wellhead prices -- i.e., that if wellhead prices rose 20 percent, residential prices would also rise 20 percent.

Third, the CLEC and Energy Action reports ignore the ways in which the American economy would adjust to -- and considerably soften -- the impact of natural gas decontrol. The studies ignore:

- That natural gas prices *neither influence, nor respond to*, changes in gas production and consumption -- despite evidence that these responses have occurred with oil decontrol.
- The benefits to consumers resulting from production and conservation would outweigh costs of decontrol.

Changes in the average wellhead price of natural gas have not caused correspondingly large changes in the prices end-users pay for natural gas. This is due to the relatively large transmission and distribution charges to bring natural gas to the consumer. According to the Energy Information Admininistration, the average annual rate of growth in real wellhead prices was about 20 percent while the average annual rate of growth in residential prices was 7 percent. Thus, during a period of adequate gas deliverability, price increases at the wellhead are not passed on to the consumer on a dollar for dollar basis. Yet, in a period of gas shortage, transportation and distribution costs increase as less gas flows through the system and these increased costs raise the price to the consumer even though the producers prices are not increased.

In a November 1981 study, the American Gas Association suggested that the price of deregulated gas may be "ratcheted up" above long-run market clearing levels by certain indefinite price escalator clauses, linked to distillate fuel oil. According to a review of this study by the Chemical Manufacturers Association, the results are wrong and comparable to the Citizen/Labor Energy Coalition and Energy Action. Assuming that 60 percent of gas under phased decontrol rises to 110 percent of distillate fuel oil bringing average prices well above market clearing, disregards the fact that both interstate and intrastate purchasers have been able to introduce special features in many producer contracts which will reduce the potential impact of indefinite pricing provisions.

Also ignored is the fact that producers, have no interest in pricing natural gas above competing fuels which would result in shut-in production. Under phased decontrol, producers would be induced to renegotiate those contracts that resulted in prices above the market clearing price, thereby reducing any fly-up rather than expanding it.

The Benefits of Phased Decontrol. The case against continued regulation of natural gas prices at the wellhead is most convincing. Up front, we should face the consequence that deregulation will tend to move gas prices at the wellhead to the market clearing level, that is in the view of many economic experts, towards the price of residual fuel oil at the point of consumption, less the cost of transporting and distributing gas to market. However, benefits both directly and indirectly are numerous. Directly, the American gas consumer will benefit from:

- increased gas reserves through increased exploration,
- increased gas deliverability through economic development of already proved reserves and continued production from marginal properties,
- uniform, market-dictated pricing and resource allocation, free of government-induced artificialities and distortions,
- long-term lower gas prices than can be expected

if fuel and feedstock needs are supplied by foreign oil.

In common with all members of U.S. society, the gas consumer will share in these indirect benefits:

- Lessened dependence on imported oil; as domestic gas exploration and production increase, many analysts believe that the amount of oil we import will be reduced by at least a few hundred thousand barrels per day to over a million barrels per day,
- Lowered foreign payment deficits as we use domestic energy, in lieu of purchased foreign energy,
- Greater certainty of price and supply to provide a rational basis for advance planning,
- Efficient allocation of capital and manpower to develop and produce the nation's gas resources,
- Conservation opportunities dictated by correct price signals,
- Rational development of all U.S. energy potentials, based on market-dictated price relationships between gas, oil, coal, solar and other resources.

Actually, Congress recognized these benefits in passing the Natural Gas Policy Act of 1978 which, in spite of its serious defects, represents a turning away from the concept of federally-mandated producer prices, at least for certain categories of natural gas. We believe that this is the appropriate time to carry the philosophy which led to enactment of the NGPA to its logical conclusion, and to provide for a new and more effective approach to the phased deregulation of all natural gas prices by January 1, 1985. We join many experts both inside and outside of the energy industry in advocating this step, and are heartened by the support received from industrial users, distinguished economists, and the media, including the New York Times, The Wall Street Journal and the Washington Post.

Alternatives. In light of the evolving consensus that the NGPA's approach to partial deregulation contains serious flaws, and that a phased deregulation of all natural gas is a wiser and more economically efficient solution to our natural gas supply problems, we are, of course, somewhat discouraged by the President's recent statement that a crowded legislative agenda does not permit the administration to pursue changes in the NGPA this year. Nevertheless, we are gratified by the President's strong statement of continued support of phased deregulation as a part of a national energy policy geared to maximum production of our natural resources at the least cost to consumers.

Postponement of Congressional action on this issue until 1983 gives us additional time to investigate the workings of the current Act and to provide even further documentation of what we know to be the strong case for the changes we advocate. And, of course, we welcome Chairman McClure's announcement that this Committee will be pursuing a thorough and on-going series of hearings into all aspects of natural gas policy. We fervently hope that this process will culminate in early consideration of a natural gas deregulation bill in the next Congress. Having said that much, however, it would be unwise not to caution against any piecemeal legislative initiatives on natural gas-related issues in the meantime. A few legislative proposals have been either introduced or rumored, among them attempts to deal with certain contractual provisions which could not be fairly and fully considered in a vacuum. These ancillary matters must be addressed in the context of and in conjunction with our entire natural gas pricing policy, allowing the Congress to place each individual component within the mosaic of our total gas policy. Of course, pending such action it is quite appropriate to consider these matters in Congressional hearings, such as those which this Committee has now begun.

Congressional consideration of the natural gas policy issue was significantly advanced recently by the introduction of Senator Johnston's bill, S.2074. This legislation represents a major step forward by presenting a consensus approach to natural gas policy which unites producers, transporters and consumers. It joins the latest product of Congressman Gramm's efforts on the House side, H.R.5866, as a worthy focus of attention by those considering the future course of our natural gas policy.

We congratulate Senator Johnston and Congressman Gramm for their continuing contribution to the effort to rationalize America's natural gas pricing policy.

We should not conclude today's testimony without commenting upon FERC's exercise of certain authorities granted it by the Natural Gas Policy Act. As you know, FERC has proposed incentive prices for "near deep" gas discovered between 10,000 and 15,000 feet beneath the surface, and for gas discovered at depths of more than 300 feet offshore. The proposed "near deep" rule will be the subject of consideration at an April 6th Commission hearing, and the "deep water" rule is in the late stages of the "notational voting" procedure, and should become final in the near future. The Natural Gas Supply Association supports the Commission in this exercise of the authority delegated to it by Section 107(b) and (c) (5) of the Natural Gas Policy Act which allow FERC to set incentive prices for high-cost gas when evidence supports a finding that higher prices are necessary to elicit new supplies from certain formation, areas or categories of gas which involve higher costs and greater risks.

We also understand that FERC is considering exercising its authority to review rates for old interstate gas, although no rulemaking on this subject has yet been issued. FERC's authority to review these rates is clearly and unequivocally set forth in Sections 104(b)(2) and 106(c) and 109(b)(2) of the Natural Gas Policy Act, which authorize the Commission to adjust Section 104, 106 and 109 prices so long as the increased price is "just and reasonable within the meaning of the Natural Gas Act." Basically, the NGPA set prices for already-flowing interstate gas at the April 1977 rate, adjusted for inflation, but gave the Commission express authority to review these rates and to adjust them, if the rate would be just and reasonable under the Natural Gas Act.

Unfortunately, non-binding sense of the Congressional resolutions introduced in the House and Senate make the careless allegation that FERC is attempting a "backdoor decontrol" of natural gas prices through a review of old gas rates. S.Res.331, recently introduced by Senator Chafee, incorporates this charge which, as we have shown, is both misdirected and contrary to fact. FERC has announced no such action regarding old gas rates. It lacks authority to deregulate any natural gas prices, for whatever reason. What the NGPA authorizes the Commission to do is adjust the sections 104,106 and 109 prices to reflect current conditions, just as it would have done if the NGPA has not been enacted. We are forced to the sad conclusion that these resolutions are meant to confuse rather than assist Congress and the public in addressing a crucial policy issue.

If FERC does institute a review of these rates a forty-year history of Commission precedent and court decision will guide its actions. Chairman John Dingell of the House Energy and Commerce Committee, the House floor manager for the NGPA, recently agreed that FERC has clear authority to take this action. We agree, and support any decision by the Commission to exercise this authority and to adjust these rates in compliance with the requirements of the Administrative Procedures Act, the Natural Gas Act, and the Natural Gas Policy Act.

In closing, we want to thank the Committee for the opportunity to present this testimony. The case for natural gas decontrol is more compelling each time we appear. We are prepared to offer our full cooperation as you consider this issue.

APPENDIX I

Gas Cushion at a Glance

Selected Intrastate Pipelines

Pipeline Companies	Purchased Gas Cost * 3d Q. 1981 ($/Mcf)	Primary Area of Service	Major Industrial Purchasers
Louisiana Intrastate Gas	3.43	Louisiana	Chemicals
Houston Pipeline Co.	3.17	Texas	Chemicals
Monterey	2.58	Louisiana	Petroleum, Chemicals
Sugar Bowl	3.92	Louisiana	Chemicals
United Texas Trans.	3.38	Texas	Petroleum Chemicals
Lone Star	2.68	Texas	Glass, Chemicals

Selected Interstate Pipelines

Pipeline Companies	Purchased Gas Cost * 3d Q. 1981 ($/Mcf)	Primary Area of Service	Major Industrial Purchasers
Southern Gas Pipeline	2.75	Southeast	Glass, Chemical, Paper
United Gas Pipeline	2.48	Gulf Coast	Chemicals, Metals
Transcontinental Gas Pipeline	2.87	Eastern Seaboard	Chemicals, Glass, Paper
Mississippi River Transmission	3.40	South Central	Chemicals, Food
Columbia Gas Transmission	2.80	Mideast Northeast	Metals, Glass
El Paso	2.38	Southwest Pacific Coast	Metals, Petroleum, Glass
Texas Eastern	2.34	Mideast Northeast	Metals, Chemicals
Natural Gas P/LA	2.07	Midwest	Metals, Chemicals
Tennessee Gas Transmission Co.	2.22	Mideast	Metals, Chemicals
Cities Service	2.28	Midwest	Petroleum, Food, Chemicals

*includes field and pipeline purchases.